

THE MILLING WORLD

AND

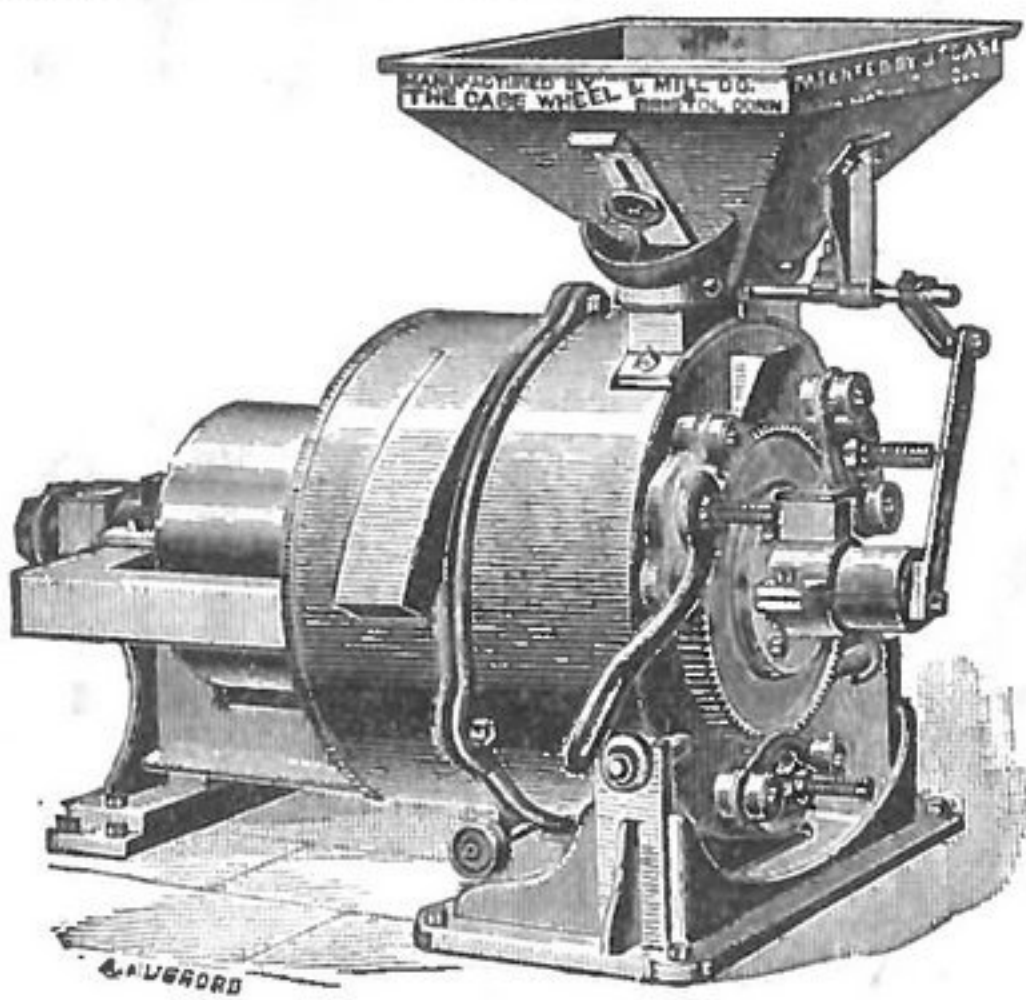
CHRONICLE OF THE GRAIN AND FLOUR TRADE

PUBLISHED EVERY MONDAY MORNING.

VOL. XX. No. 26.

BUFFALO, N. Y., AUGUST 26, 1889.

\$1.50 PER YEAR.



VICTORY OVER ALL OTHERS. SINGLE & DOUBLE VERTICAL GRINDING MILLS.

(J. T. CASE'S PATENT.)

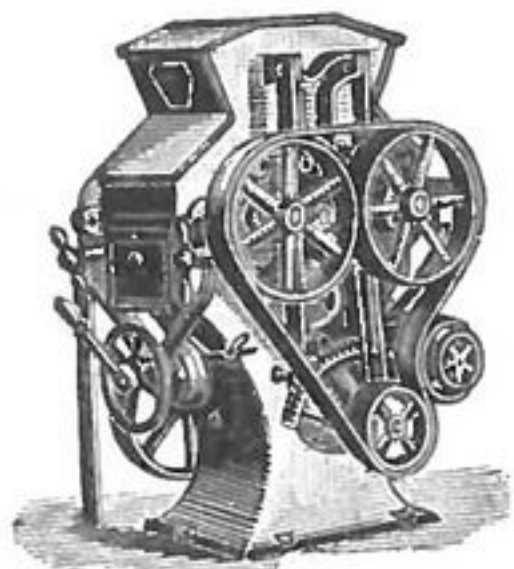
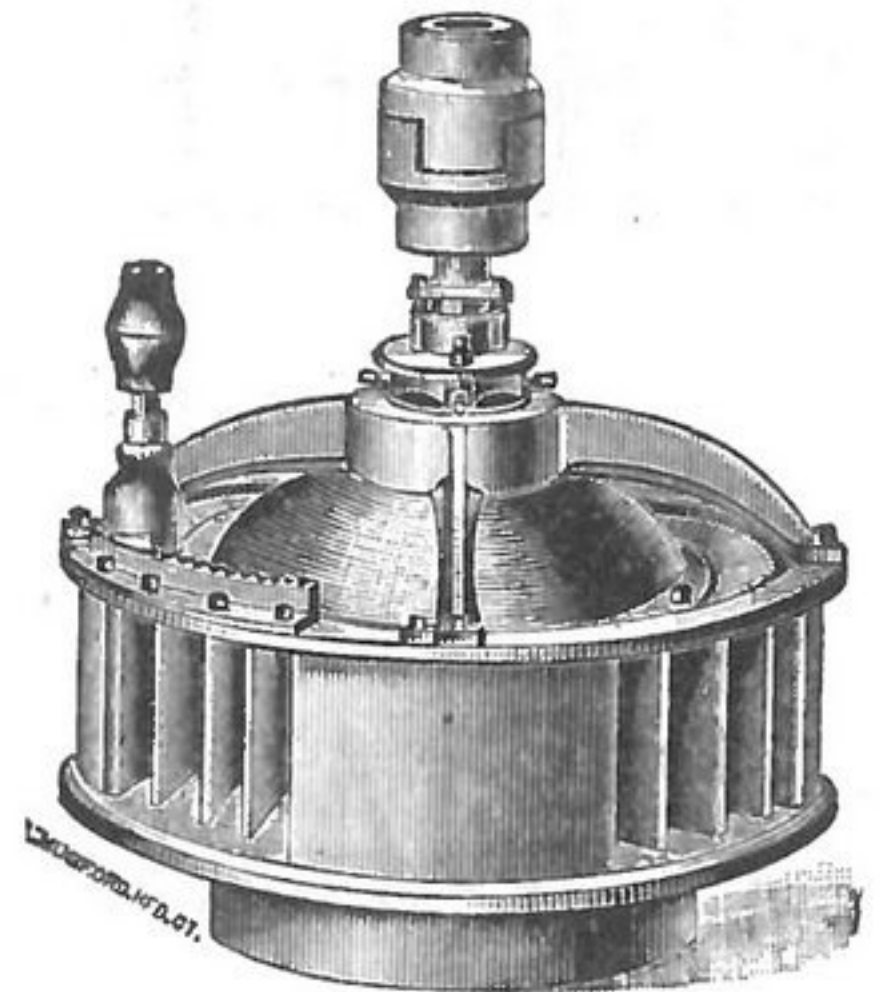
FACTS ARE MIGHTIER THAN ASSERTIONS. READ WHAT THEY SAY:

"Our 20-inch mill made by the Case Wheel & Mill Co. is in every respect satisfactory, easy to handle, and best results obtained of any mill in the country, with same quantity coal and power."—A. S. RUSSELL & Co., Meriden, Conn.
 "Superior to any mill in use."—GEO. WESTON, Bristol, Conn.
 "The best satisfaction in quantity and quality."—CHILD'S ELEVATOR, Manchester, Ct.
 "We take pleasure in recommending it."—GARLAND, LINCOLN & Co., Worcester, Mass.

SEND FOR CATALOGUE—ILLUSTRATED AND DESCRIPTIVE.

The Improved National Turbine Water Wheel

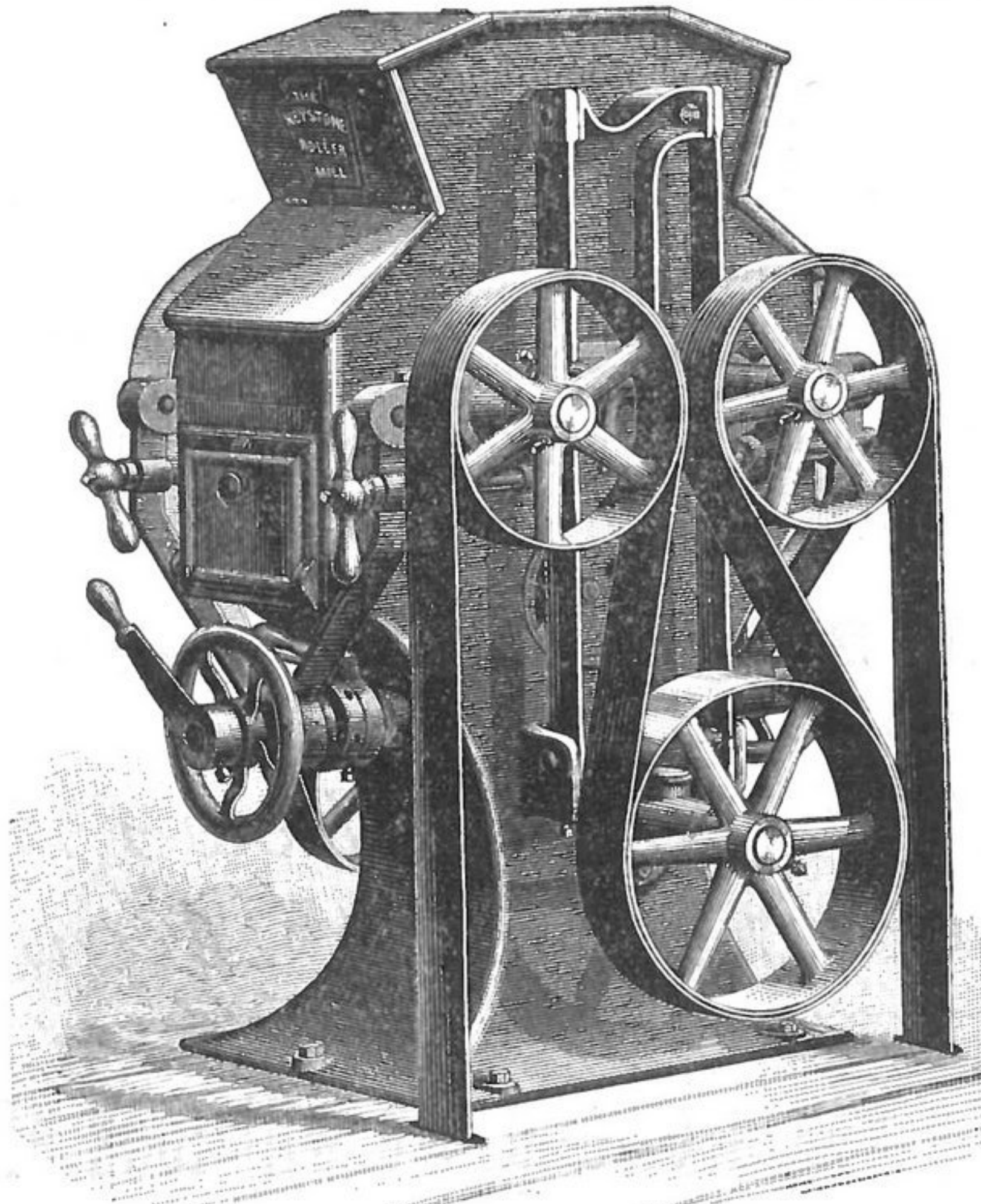
The Best for Economy; The Best for Durability; The Best for Power. ONE THOUSAND FIVE HUNDRED NATIONAL WATER WHEELS IN USE Prove that our Assertions are Supported by the Leading Manufacturers in the Country. Send for illustrated catalogue and prices to the manufacturers.



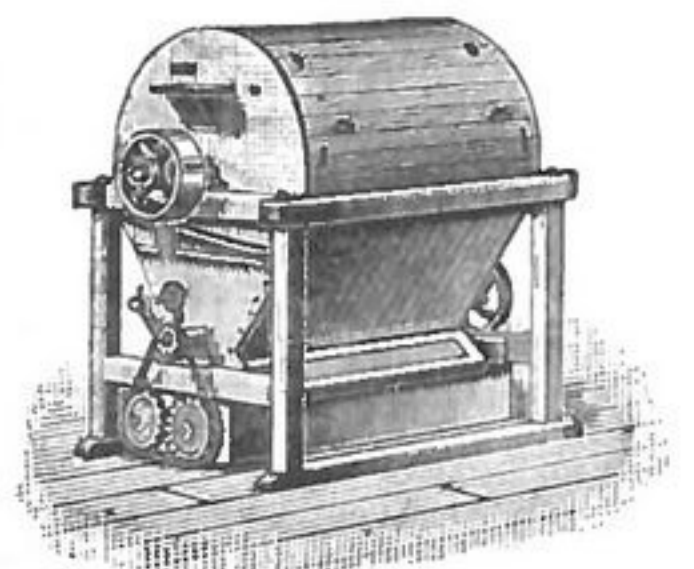
Wheat Roller Mill.

THE "KEYSTONE"

WHY IS IT THE BEST ROLLER MILL IN THE MARKET?



THE KEYSTONE FOUR ROLLER MILL.



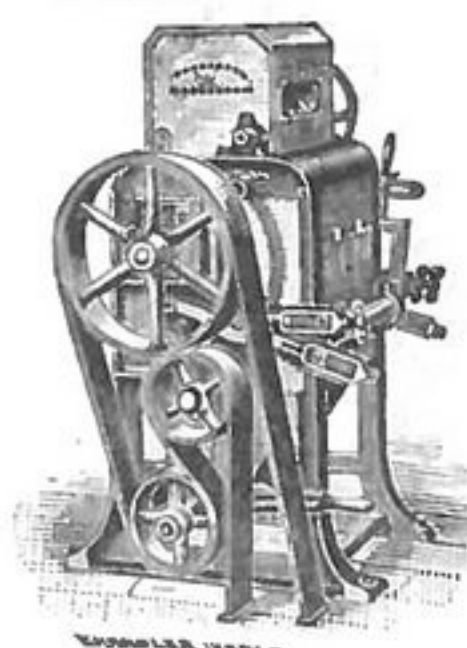
Bran Duster.

BECAUSE the adjustable roll is not pushed against its mate but is held rigidly to it, which takes out all vibration.
 BECAUSE it does 25 per cent. more work than any other roll.
 BECAUSE the heated air is taken out of the machine.
 BECAUSE it has the best feeder.
 BECAUSE it has no tremor.
 BECAUSE it has the effect of a roll without springs.
 BECAUSE it can be trammed in a quarter of a minute.
 BECAUSE you can tram either end of the four rolls.

BECAUSE it runs 25 per cent. lighter than any other roll.
 BECAUSE all bearings are universal and never get out of line.
 BECAUSE you can throw the rolls apart from either side.
 BECAUSE you can set both ends of the roll at the same time with one movement.
 BECAUSE only one spring is used for both ends of rolls.
 BECAUSE there is no slip to the differential.
 BECAUSE no dust escapes from machine, all openings being covered.

Also ask for prices on the only Noiseless Sieve Scalper, the "Allfree" Improved Purifier, "Climax" Bran Dusters, and "Allfree Flour Packer.

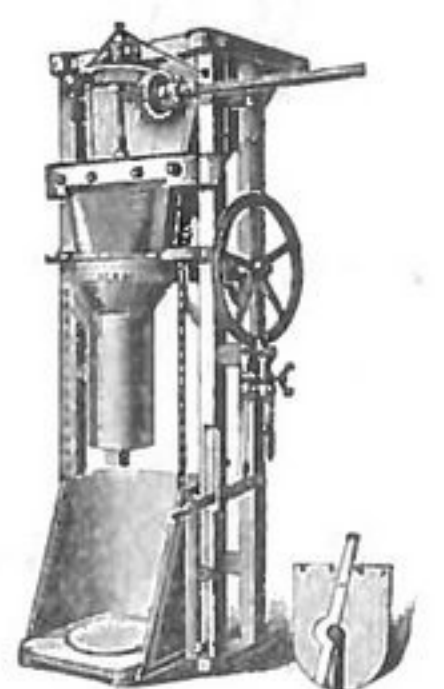
Also ask for prices on "Allfree" Centrifugal Reels, "Success" Bolter, Three Reduction Corn Mills, Latest Improved Designs.



Corn Mill.

Complete Outfits for Flour or Corn Meal Mills of any Capacity.
THE J. B. ALLFREE CO., INDIANAPOLIS, IND.

103 & 105 South Pennsylvania Street.



Flour Packer

BRAINS, BRAWN AND PLUCK WILL ACCOMPLISH WONDERS, — BUT — THEY DON'T COUNT FOR MUCH IN MILLING WITHOUT CASE MACHINERY.

This fact is so well established that Arguments are not necessary.

WHERE CAN YOU FIND ITS EQUAL?

Find a good roller miller who has run the different systems and makes of mills, and ask him which he prefers to run and which will produce the best flour. His answer will be every time

"A CASE MILL DOWNS THEM ALL"

Millers who think of putting in a Roller Outfit or of buying more machinery,

PONDER WELL BEFORE BUYING,

And remember that even if you DO save a few dollars on your contract by buying inferior machinery, WE DON'T CARE WHAT GUARANTEES THEY MAKE, those few dollars saved will lose you as many hundreds before you are through with your BARGAIN, and DON'T FORGET IT. Give us your contract, and if we don't give you a mill that will fill or exceed our guarantee, you needn't pay for it, for

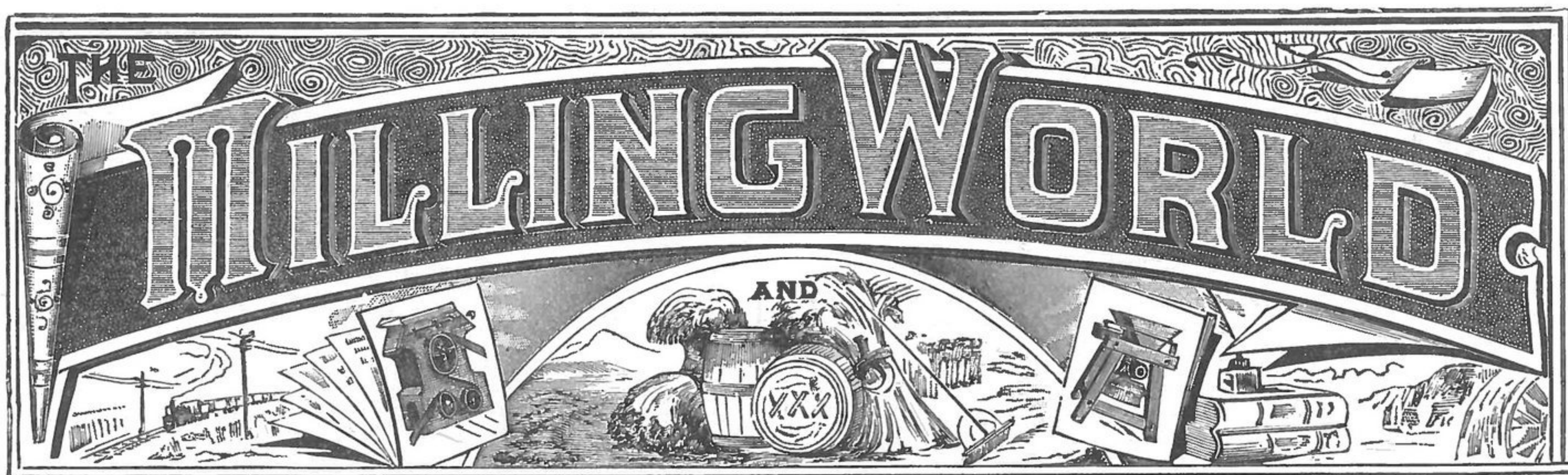
WE WILL SATISFY YOU EVERY TIME.

Mill Supplies of all kinds at Low Prices. Rolls Re-Ground and Re-Corrugated with Accuracy & Dispatch.

Write Us for Anything you need and We will look after Your Interests.

THE CASE MFG. CO., COLUMBUS, O.

PLEASE MENTION "THE MILLING WORLD."



CHRONICLE OF THE GRAIN AND FLOUR TRADE
PUBLISHED EVERY MONDAY MORNING.

VOL. XX. No. 26.

BUFFALO, N. Y., AUGUST 26, 1889.

\$1.50 PER YEAR.

AMERICAN flour-making, in consequence of the fine quality of the present abundant crop of wheat, at once regains all it lost through the past two years by poor crops at home and good crops abroad. The present campaign opens well and promises well for the army of American flour-makers. European countries need our grain and our flour. Prosperity seems to be at hand for our flour-makers.

READ carefully the new advertisement of Messrs. T. B. Wood's Sons, of Chambersburg, Pa., which appears in this number. Their corn and cob crushers, shafting, pulleys, hangers, mill-gearing and other wares are standard. Address them for price-lists and illustrated catalogues. Correspondence will be promptly answered, and intending purchasers can not afford to ignore this establishment.

LET us see! Only a month or six weeks ago Dakota was a howling desert, burned by intense heat, dried by merciless drouth and swept by resistless winds, that tore up the wheat and other vegetation by the roots and scattered the crops to the four points of the compass. Every thing was ruined. The people were fleeing from the territory. The stock was starving. The end of things had come to Dakota. Now the tune is changed, and Dakota comes in with a magnificent crop of wheat and vegetables, and prosperity seems assured. These are days of wonderful changes.

JUDGING from the reports of the exhibition of milling-machinery at the Paris Exposition, it would seem that French millers, while singularly conservative about the adoption of the roller system of flour-making, are by no means destitute of "novelties" in the line of machinery and processes. Some of these "novelties" have been described in THE MILLING WORLD, and it is a curious fact that they are generally in the line of the fantastic and the sensational, rather than the useful, the reasonable and the practical. When we read of a wheat-splitting machine, which splits each grain so exactly and so perfectly that the two halves are held together by a shred of the coating of the berry, we feel like confessing that we do not believe the statement, although we do not assert dogmatically that it is a false statement. The French genius seems to be just entering upon a line of experiments in splitting, decorticating, dismembrating, disc-grinding and other processes that were long ago fully exploited by German, American and Hungarian milling inventors. It is to be feared that the French "novelties" shown are calculated to do better work when standing still, or running empty, or on artistically prepared papers, than they could do in actual work under load.

INCONSISTENCY is one of the chief characteristics of the journals, both in this country and in Europe, which think that the American grain and flour business is in a precarious condition because of the competition of the world. These journals sit down and tremble before every fantastic bugaboo or temporary check that affects our grain business, but they can not or do not see the checks and bugaboos that affect the grain business of other countries. Last year we

had a short and poor crop of wheat. Russia had an abundant crop. India had an average crop. As a result, our exports of wheat fell off and those of India and Russia increased correspondingly. The alarmists went off in powdery fashion and began to croak and wail that the American grain and flour exporting business was hopelessly ruined because foreign markets were hopelessly lost. Now the situation is reversed. This country has a fine, abundant crop. Russia and India and other competing countries are short. Yet the alarmists do not claim that Russia, India and the other countries that are short have hopelessly lost their hold because of one short crop. In their estimation it is only the United States that loses all by one poor crop. If the American business was ruined last year, certainly the Indian, Russian, Australian and Austro-Hungarian business is hopelessly ruined this year. These fool-alarmists do not apply the same rule of measurement to all countries.

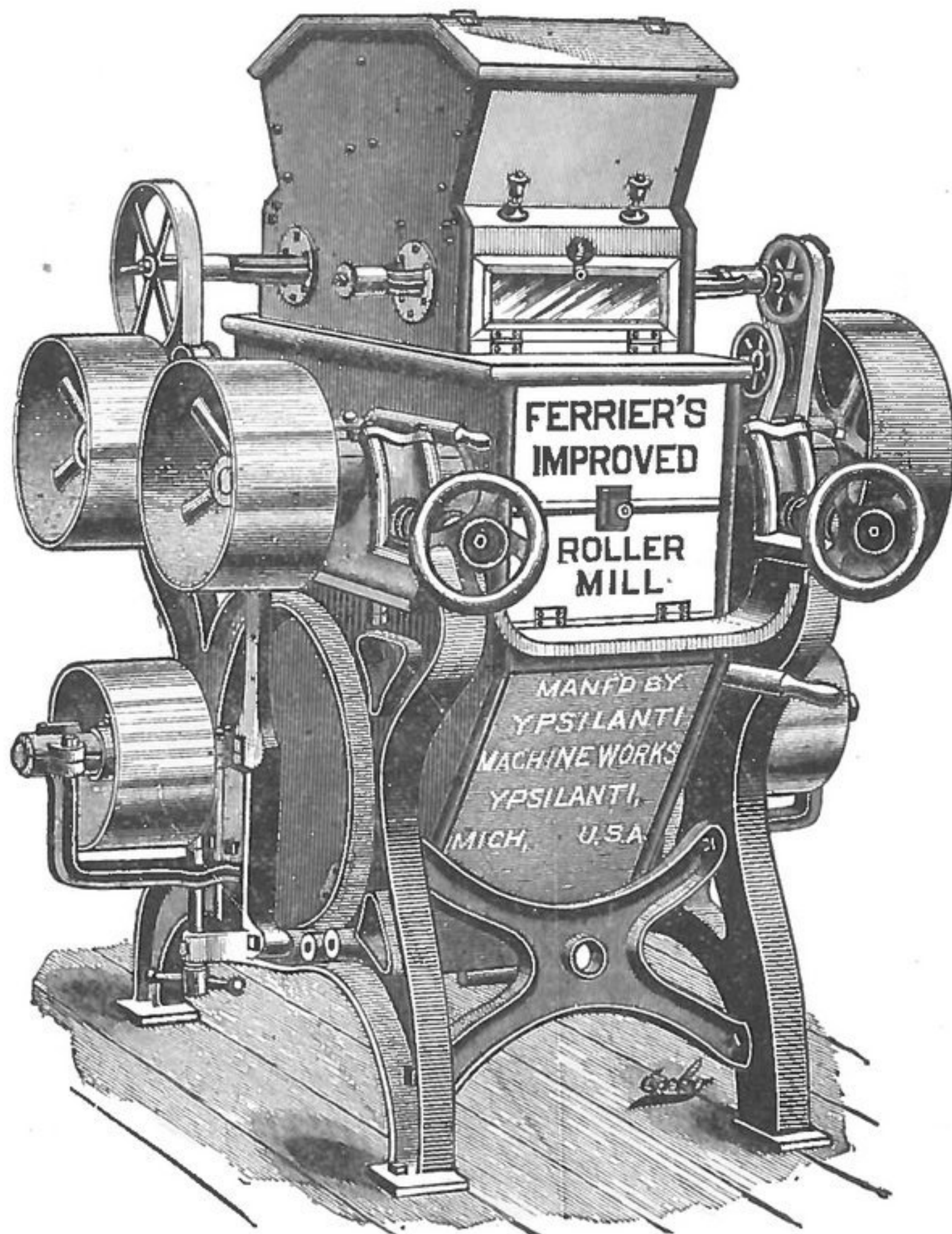
UNITED States Consul-General Way, stationed at St. Petersburg, Russia, in a recent report attempts to inject some of Dr. Brown-Sequard's Elixir of Life into the veins of the very sick Russian wheat bugaboo. He points out that Russia contains a wheat area of 450,000 square miles, or 288,000,000 acres, and he asserts that, under full development, that country could grow enough wheat to supply the whole world. He points out the present obstacles to full development, but he asserts that those obstacles are likely to disappear, and that Russia will in the near future come into direct competition with all the other great wheat-growing countries. We see nothing alarming in Consul Way's statements of facts or his deductions from those facts. What he says of Russia may be true, so far as extent and capacity are concerned, but it is perfectly legitimate to say the same things of Australia, South America, Africa and Southern Asia, with their vast undeveloped areas of fertile soil and their favoring climatic conditions. The weak point in his presentation is the leaving out of the problem of Russian relations to other countries, of the conditions that would induce all the world to abandon wheat-growing and turn to Russia for supplies, and of the necessary increase in the human race that would necessitate the full cultivation of the 288,000,000 acres of alleged wheat lands in Russia. The Russian bugaboo is about the sickest of all the wheat bugaboos of the year, and the disaster that has overwhelmed agriculture in a large part of that great country this season shows the nature of the climatic difficulties and inflictions with which Russian wheat-growers must always be ready to contend. It is easy to figure out that at 10 bushels to the acre Russia could yield 2,880,000,000 bushels, at 20 bushels 5,760,000,000 bushels, and at 25 bushels 7,200,000,000 bushels in a single year, but what possible inducement for so great a development in Russian wheat-growing can be conceived so long as the wheat-consuming capacity of the world is only slightly over 2,000,000,000 bushels? The year 1889 is too early in the calendar for paroxysms of fright at the Russian wheat bugaboo. Put it aside till the year 3889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

MILL BUILDERS

And Manufacturers of

FLOUR MILL MACHINERY



Sizes of Ferrier's Improved Four-Roller Mills.

6x12	6x15	6x20
9x15	9x18	9x24

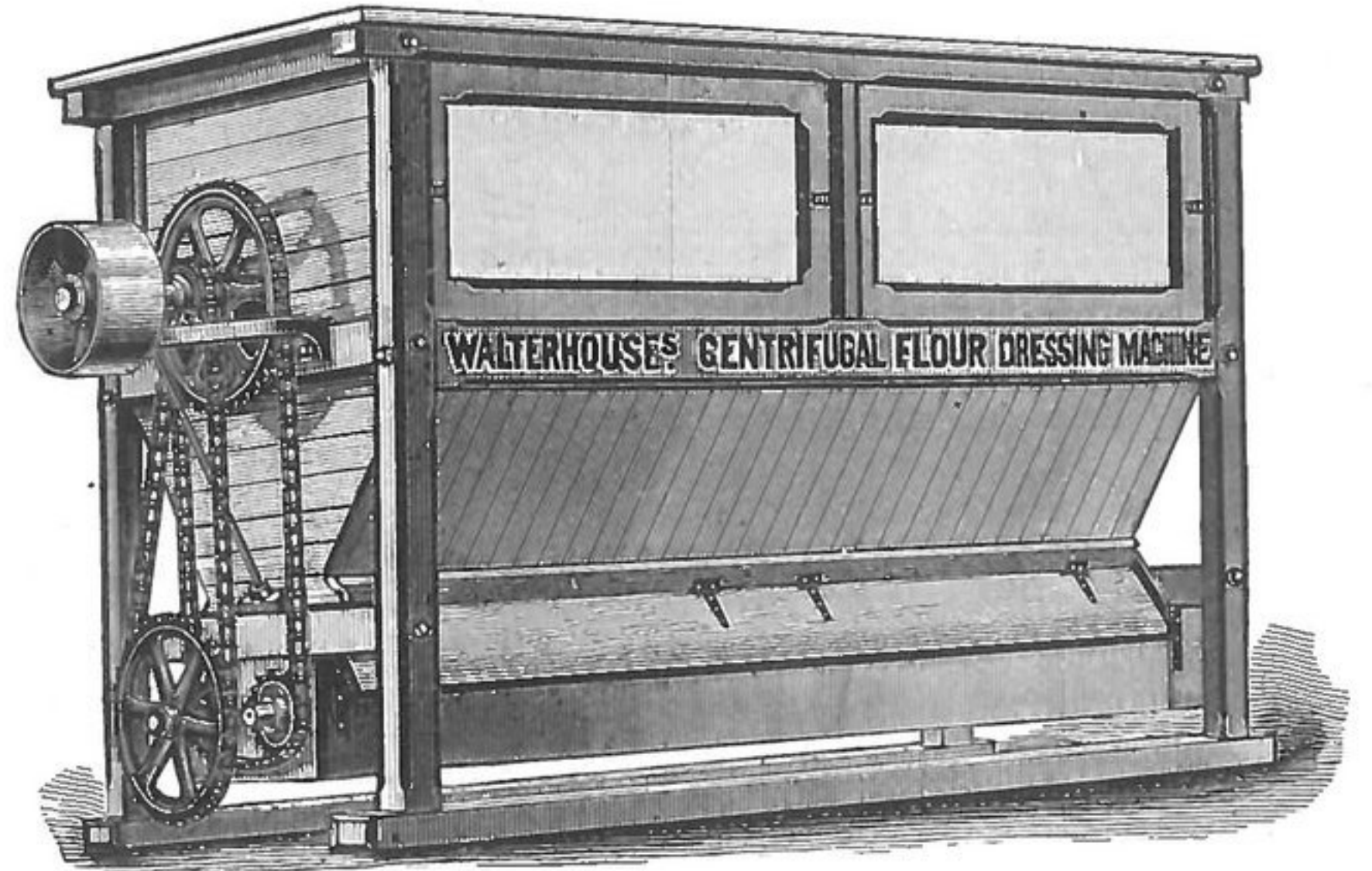
YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

Gentlemen: We have had a line of your "Roller Mills" in use for over two years, and they have given entire satisfaction in every respect. They work like a charm, and their ease of adjustment and solid structure, together with the excellent finish you give them, can but recommend your machines to the milling public.

Yours respectfully, A. R. DICKINSON & CO.

NASHVILLE, TENN., MAY 3, 1889.

Dealers in Bolting Cloth. Walterhouse's Centrifugal; Walterhouse's Slow-Running Flour Dresser with Inside Cylinder; Plain Round Reels; Scalpers, Bolting Screens, Etc., Etc., Etc.



JOHN ORFF, PROPRIETOR OF
EMPIRE FLOURING MILLS.
FORT WAYNE, IND., APRIL 10, 1889.

YPSILANTI MACHINE WORKS, YPSILANTI, MICH.

Gentlemen: The Centrifugal Reel bought from you some time ago is doing its work complete in every respect. It does a large amount of work, and does it well. Should we make further changes in bolting, shall use more of them. Wishing you success, we remain,

Respectfully, JOHN ORFF.

TO YPSILANTI MACHINE WORKS.

OFFICE OF LEXINGTON MILL CO.,
LEXINGTON, MICH., JAN. 22, 1889.

Gents: In reply to yours of June 5th, would say that we are well pleased with our mill. It has more than met our expectations. Although it was feared that the six-inch rolls would not prove a success, we find them to be complete in every respect. We are making as fine a flour as there is made in the state, and we guarantee our patent to be equal to Minnesota Patent. The mill has given us no trouble whatever since we started it, and for plan and workmanship, your Mr. G. Walterhouse deserves great credit. If your friends doubt it would be pleased to have them come and see for themselves.

Yours respectfully, LEXINGTON MILL CO.

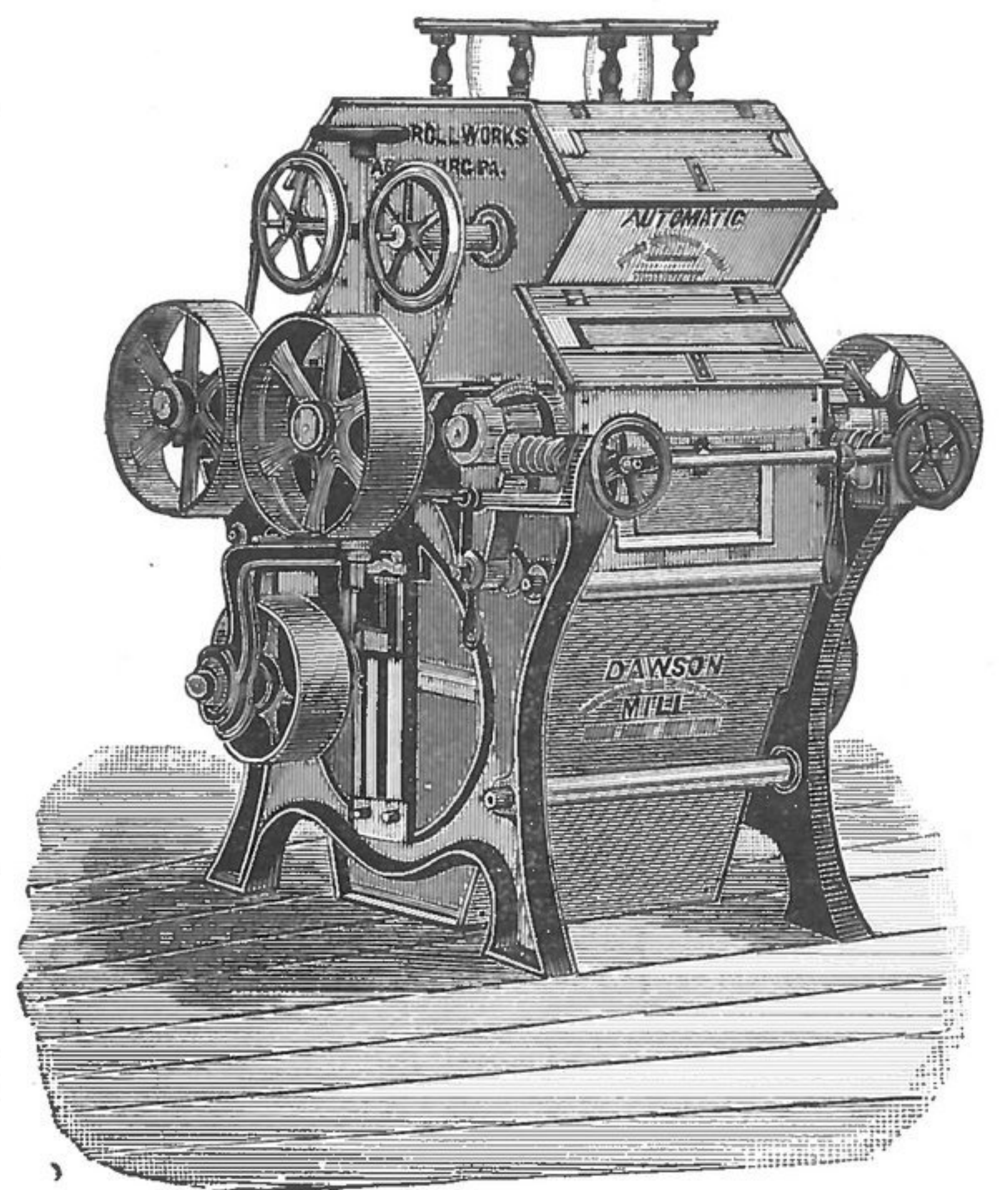
Dawson's Roller Mill

Is acknowledged to be the very best in the market. It has our Patent Automatic Centrifugal feeder, never failing to feed the stock the full length of rolls in an even sheet. It is the Latest and Best feed out, uses less power and is simple in construction. It can be placed on any style of machine with little expense. We use for roll bearings phosphor-bronze metal which will admit rolls being run at any speed without heating and with little friction, and uses little oil. We use the Dawson Corrugation, which is admitted the best in long or short system mills as the action is granulating rather than CUTTING.

We have a large plant to Re-grind and Re-Corrugate Rolls.

Owing to our late increased facilities and central location we are enabled to ship goods promptly on the shortest notice.

PARTIES CONTEMPLATING REMODELING THEIR MILLS OR BUYING ANY ROLLER MACHINES ARE REQUESTED TO PUT THEMSELVES IN CORRESPONDENCE WITH US.



FOR PRICE LISTS AND CIRCULARS, ADDRESS,

Dawson Roll Works, Harrisburg, Pa.



PUBLISHED EVERY MONDAY. OFFICES: { Corner Pearl and Seneca Streets,
Over Bank of Attica.
McFAUL & NOLAN, - - - PROPRIETORS.
THOMAS McFAUL. JAMES NOLAN.

SUBSCRIPTION.

In the United States and Canada, postage prepaid, \$1.50 Per Year, in advance; remit by Postal Order, Registered Letter, or New York Exchange. Currency in unregistered letter at sender's risk.
To all Foreign Countries embraced in the General Postal Union, \$2.25 Per Year, in advance.

Subscribers can have the mailing address of their paper changed as often as they desire. Send both old and new addresses. Those who fail to receive their papers promptly will please notify at once.

ADVERTISING.

Rates for ordinary advertising made known on application.

Advertisements of Mills for Sale or to Rent; Partners, Help or Situation Wanted, or of a similar character One cent per word each insertion, or where four consecutive insertions are ordered at once, the charge will be Three cents per word. No advertisements taken for less than 25 cents. Cash must accompany all orders for advertisements of this class.

Orders for new advertisements should reach this office on Friday morning to insure immediate insertion. Changes for current advertisements should be sent so as to reach this office on Saturday morning.

EDITOR'S ANNOUNCEMENTS.

Correspondence is invited from millers and millwrights on any subject pertaining to any branch of milling or the grain and flour trade.

Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

This paper has no connection with a millfurnishing house and aims to represent the trade without prejudice, fear or favor.

Address all communications

THE MILLING WORLD,
BUFFALO, N. Y.

Entered at the Post Office, at Buffalo, N. Y., as mail matter of second-class.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 cent for each additional word. Cash with order. Four consecutive insertions will be given for the price of three.

WANTED.

A situation with parties who appreciate good work, with rolls or buhrs on patents. Have the following recommendation from Miller Bros., Forest Grove, Ore., dated Nov. 10, 1887: "To whom it may concern: This is to certify that Peter Provost has been in our employ as head miller, and has given entire satisfaction. We believe him to be a very competent man, and cheerfully recommend him to the milling public." State wages you wish to pay. Address, PETER PROVOST, Menominee, Mich. 21

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 cent per word, for one insertion, or 3 cents per word for four insertions. No order taken for less than 25 cents for one insertion, or 50 cents for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

WANTED.

A miller with some capital to help stock with, to take charge and run my mill. Address LOCK BOX 285, Clearfield, Clearfield county, Pa 1720

FOR SALE.

Flour-mill, corn-mill and cotton-gin, in a new growing country, splendid for wheat. Good opening for a mill-man who understands the business. For particulars apply to W. J. MILLER & CO., Ballinger, Texas. 2023

FOR SALE.

Several good second-hand and new turbines of various styles. Second-hand price list and descriptive matter and prices of our new machines sent free. Every one interested in the shortest route to successful milling on rolls or in grinding corn and feed with the least expense of power, should address us before buying.

FLENNIKEN TURBINE CO.,
Dubuque, Iowa.

8tf

MILL MACHINERY FOR SALE.

One No. 0 Standard Combined Separator, Smutter and Brush Machine; new, best make.
One 20-Inch Under-Runner Portable Mill, French Buhr Stone, capacity 10 to 12 bushels per hour; new, best make.
One 14-Inch Vertical Feed Mill; best make, new, a bargain.
One No. 6 Dustless Separator; new, a bargain.
One No. 1 Full Rigged Combined Dustless Separator; new, a bargain.
Four Corn Cob Crushers, right or left hand, driven from above or below, best make; capacity 40 to 60 bushels per hour.
Three No. 1 Corn Shellers, capacity 200 to 300 bushels per hour; new.
One No. 2 Purifier. New. Best make. A bargain.
For particulars address, FRANK SMITH, care of THE MILLING WORLD, Buffalo, N. Y. 5tf

M-I-L-L-E-R-S

Wanting Bolting Cloths should write for discounts on same before purchasing elsewhere to

SAMUEL CAREY,
17 Broadway, New York.

WANTED.

A good buhr miller, that thoroughly understands his business, to run a custom mill. Must be a sober, industrious man. State age, how long at the business, whether married or not, and best terms for steady employment. Give references. Address BEACH, BROWN & CO., Montrose, Pa. 2223

THE wheat-crop of Chicago is yet to be heard from. The new parts added to that town recently ought to yield a large crop of wheat.

THERE seems to be a fair prospect that the elevator business in Buffalo will soon be in better odor with the outside world. With a number of the shortage men and mixers in limbo, or out on bail waiting to be sent to limbo, and others fleeing from justice, this grain center ought soon to be known as a safe place for buyers to operate in. We hope to see every wrong-doer punished to the full extent of the law.

THE wheat "bears," who have been growing a 600,000,000-bushel crop of wheat with their chins, have voluntarily reduced their crop to 500,000,000 bushels. The "bulls" have not made a distinct figure on the crop, and the other estimators, mainly disinterested and philanthropical, have settled on 489,000,000 bushels. That is a large figure, but it is not the "boss crop," as some of the fake daily newspapers declare it to be. In 1882 the United States wheat crop was 504,186,000 bushels, and in 1884 it was 512,765,000 bushels. The present crop is a large one, however, and the quality is finer than that of any previous crop.

MILLERS, grain-growers, grain-dealers and grain-gamblers may now consider the wheat crop about out of the way, as the harvest is practically completed. The millers may rest assured that they will find plenty of good wheat at fair prices, and that the market for their flour will be fair. The gamblers will now be obliged to lie about something beside the weather, as the wheat is out of the reach of weather influences for this season. The bulls and bears must boom and wreck on some basis of lies that does not include the weather, but they will not be at a loss for a basis that will be as productive of lies as Dakota soil is of wheat. The season has already seen some able-bodied lying about crops, but the ornamental, flambergasted, hifalutin, eleven-storied cock-and-bull yarns are yet to come. Meanwhile, Messrs. Millers, do not be excited by any thing you hear from the gamblers. Generally, the more exciting their stories are, the more hopelessly false they are. The season has been a good one, and now all the conditions, at home and abroad, appear to favor you. Open the campaign courageously, work steadily, and prosperity will be your reward.

EUROPEAN journals, not always friendly or even fair to the United States, are gleefully pointing to the fact that the tide of emigration from Europe is running with less strength toward the United States and with correspondingly greater strength toward South America. The change in the tide does not distress this country one atom. There is a good reason for the change this year. The immigrants into the United States pay their own ocean fare, buy their own railroad tickets to those parts of the country in which they wish to settle, and buy their own land to settle upon. In the Argentine Republic the government pays their ocean and railroad fare, throwing in food on the way, and gives them land to settle upon. This year the Argentine Republic will expend \$6,000,000 in this way of inducing immigrants to go into that country. This explains the change in the tide, and we are pleased to see it go just as it is now going. The Argentine Republic is, of course, declared to be "a formidable competitor with the United States in wheat and corn growing," but as we are exporting wheat to that competing country, we desire to see its population increase as rapidly as possible, to the end that our exportations of wheat may increase. The European journals should not think that Americans are losing sleep over the change alluded to. Even with the decrease in immigration now perceptible, we are getting all the European immigrants we need or wish. We hope those who are induced to go into the Argentine Republic will not find that country unendurable.

WHEAT-GROWING IN RUSSIA.

Consul-General Way, of St. Petersburg, Russia, has published a report on "Russian Agriculture and Cereal Trade" that will interest American wheat-growers and millers directly. From this report it appears that the grain-producing lands of Russia are in two divisions or zones. The black-lands zone, the garden spot of Russia, extends right across the Kingdom from Poland far into the province of Siberia. They are lands as fertile as the delta of the Nile or the bends of the Mississippi, absolutely devoid of stone and needing no manure nor fertilizer of any description. Year after year enormous crops are raised, yet only one-tenth is cultivated. The other division, the arable steppes zone, conforms in its general direction to the black-lands; but here fertilizers or manures have beneficial results. It resembles our Western prairies, having no forests. The black-lands cover some 190,000 and the arable steppes 260,000 square miles, giving a grain-producing territory of 450,000 square miles. From the products of these lands there were exported in 1886 about 41,945,000 bushels; in 1887 about 62,475,000 bushels, and in 1888 about 70,525,000 bushels of wheat; and yet in one division alone nine-tenths of the soil lay untilled and unproductive.

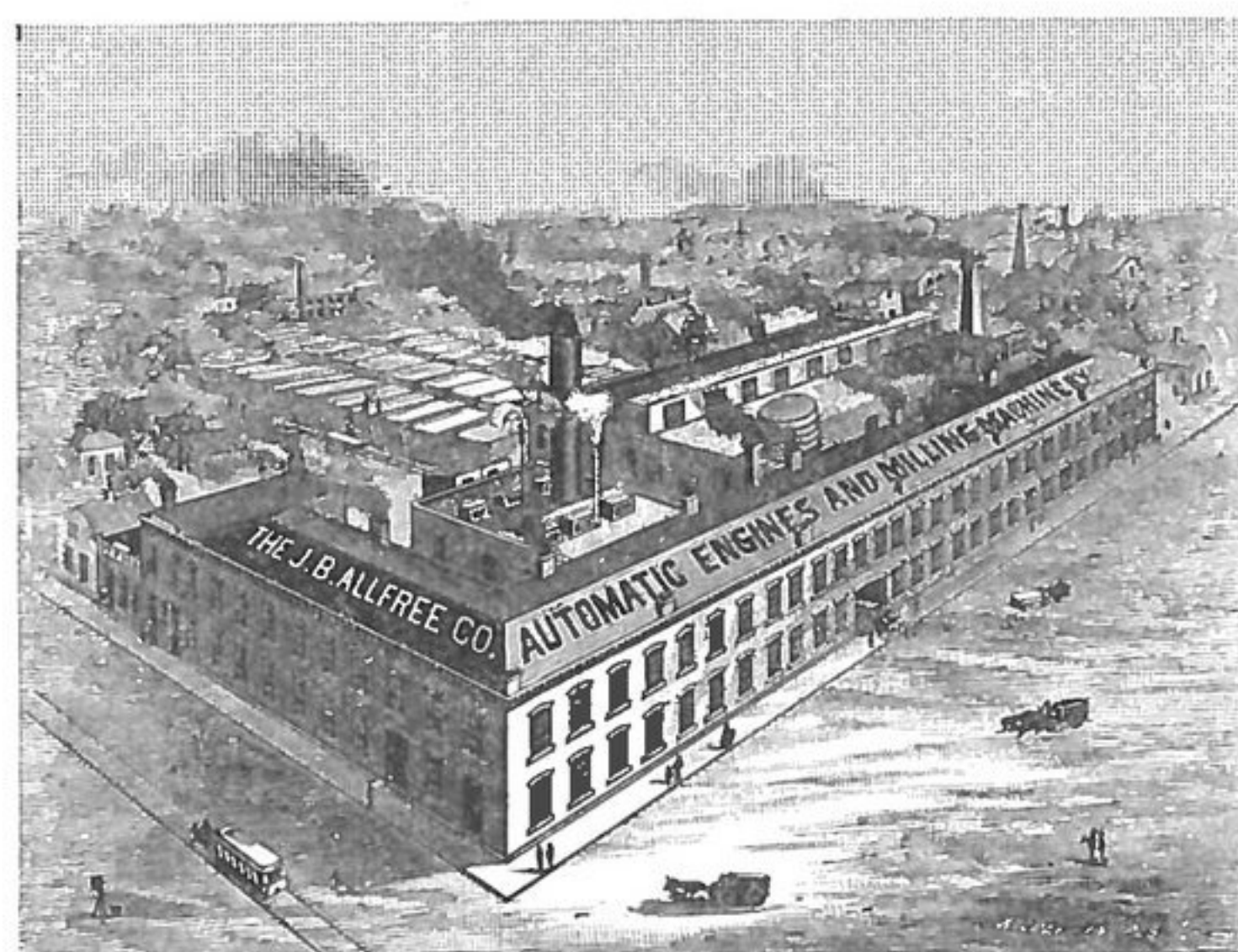
One great drawback at present is the want of means of transportation. Russia has no railroad system in the true meaning of the word. Railroads there are constructed almost entirely for military purposes. If their directions fall in with commercial requirements, well and good; if not, so much the worse for the communities to which they are not available. That such a condition of things can exist much longer is improbable. The imperative needs of imperial Russia itself must force on some comprehensive scheme for developing national wealth, and an extended railroad system, if not possible from inward resources, will assuredly be permitted to foreign capital. It may be objected that there are no signs of this, and that if such imperative need existed it would have forced such results before now. To argue this way is to ignore all Russia has done within a comparatively recent period, from its emancipation of the serf down to the present time, and to ignore also the course of events, which must within the next two or three years force the question of "rural economics" of the country upon the Government, whether it is prepared to treat it or not. These "economics," when examined, disclose other reasons for so large a proportion of the land lying idle. With the most fertile soil and the cheapest labor, grain-raising in Russia is not profitable to the peasant proprietor, who is the great producer of the country.

A statement issued by the Statistical Department of the Ministry of Domains of Russia in April is the first official recognition of the condition of the agricultural population. The following details are taken from it: The peasant proprietor has his land purchased from the Bank Foncier, the representative of the Government, on a system of yearly payments. He has then to make, first, his annual payment for his land; second, his municipal and imperial taxes, yearly growing more burdensome, have to be paid; and, third, he has to borrow money in most instances to buy seed, farming implements and food for his family until his crop matures, this to be repaid with from 20 to 50 per cent. interest added. The harvest ended, the peasant desires to take his grain to market, but can not travel without an official permit. This is delayed week after week by the local police acting in collusion with the factor. As a result, local stations or markets are glutted with wheat; then the factor steps in and offers to buy all the grain in sight for about 25 per cent. below its market value. The poor farmer, despairing of reaching the larger market he was aiming at, is compelled to assent. Coming on top of the heavy expenses in raising the wheat, this loss usually makes him bankrupt. But he has no other resource than agriculture, and, with yearly growing difficulties, must tread the same path again on the smallest scale, or as hired laborer. This system prevails over the whole country, and, in the opinion of our Consul, would, but for the abnormal demand for Russian wheat and exceptionally good prices prevailing

during the past two years, caused almost entirely by the action of American speculators putting up wheat here to a prohibitive export limit, have brought matters to a crisis before now. Under any circumstances short of drastic reform he does not see how it can be long averted. He asserts that the wheat-growing capacity of Russia would, under full development, be sufficient to feed the world.

THE NEW ALLFREE WORKS.

In the accompanying engraving is shown the fine new manufactory of the well-known J. B. Allfree Company, of Indianapolis, Ind., which is now completed and ready to be occupied. The new plant is located at 76 to 86 Shelby street, and the extensive buildings will be needed to furnish room for the growing business of the company. The plant covers two acres of ground. The shops will be equipped with machines of the latest improved styles, in both the wood-working and iron-working departments. The former will comprise the usual cutting-out and erecting shops, and the latter will be a general machine-shop for gearing, pulleys, shafting and other work, with an equipment of machinery for corrugating rolls and doing other work in iron. In addition to this there will be a sheet-iron and tinnery department and ware and stock rooms, with a special department for making bolting-cloths. The draughting-room and general offices will be located at the south side of works. The whole works are piped for natural gas, which will be used for fuel and also for lighting purposes. There is consider-



THE J. B. ALLFREE CO.'S NEW WORKS.

able vacant land adjoining the works, which will be used for the storage of lumber. The company will in a few days be installed in their new and commodious quarters, where they will cordially welcome all their old patrons as well as their new ones, who are increasing in number constantly.

SOMETHING ABOUT FUSIBLE PLUGS.

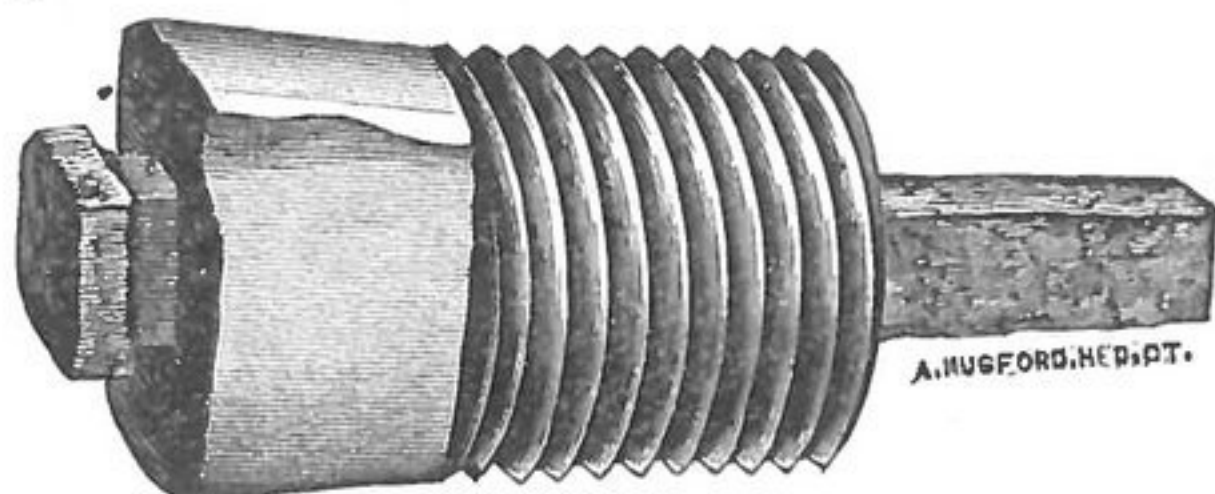
"The Locomotive."

The fusible-plug is one of the most abused appliances to be met with around boiler-rooms. It is so small and in such an out-of-the-way position that there is great temptation to let it take care of itself. Again, it is so seldom heard from that a fireman who is not very watchful is liable to forget about it. Yet when it is properly cared for the fusible-plug is a most important safeguard. In the event of an explosion, too, it often furnishes valuable evidence concerning the immediate cause of the explosion. Thus, after the disastrous explosion at the Park Central Hotel in this city, the fusible-plug was found intact; and by placing it in a retort and carefully ascertaining the melting-point of the filling, it was easily shown that at the time of the explosion the water in the boiler was several inches over the tubes. That is direct proof was obtained that the water in the boiler was not lower than it should have been. The "fusible" plug illustrated in this number was found in a boiler in the South. The water in this boiler got low one day, and of course the fusible filling melted out and gave the alarm. The owner not having time to have it refilled, and not having another one on hand, drove a nail into it and went ahead as usual until the water got low a second time, when, as the nail was

not any more fusible than the boiler, both got red-hot at the same time. Fortunately this caused such a leak around the nail that the escape of steam relieved the pressure somewhat, and the repairs cost only about \$75. The boiler was 42 inches in diameter and 8 feet long, with an internal flue used as a fire-box. The chances are that the owner will not drive any more nails into fusible-plugs.

We remember another instance, in which the fireman had driven an iron rivet into the plug in a similar manner. When we remonstrated with him he answered: "By gar, she do be melting out all the time." We told him if he were more watchful of his water-line that would not happen, but he insisted that the water had never been low since he had been fireman. In Massachusetts the law concerning safety-plugs reads as follows: "No person shall manufacture, set up, use or cause to be used, a steam-boiler, unless it is provided with a fusible safety-plug, made of lead or some other equally fusible material, and of a diameter of not less than one-half an inch, placed in the roof of the fire-box, when a fire-box is used, and in all cases in a part of the boiler fully exposed to the action of the fire, and as near the top of the water-line as any part of the fire-surface of the boiler Whoever without just and proper cause removes from a boiler the safety-plug thereof, or substitutes therefor any material more capable of resisting the action of the fire than the plug so removed, shall be punished by fine not exceeding \$1,000. Whoever manufactures, sets up, or knowingly uses or causes to be used for 6 consecutive days a steam-boiler unprovided with a safety fusible-plug shall be punished by fine not exceeding \$1,000." And it seems to us that it would be wise to have similar laws in all the States.

When fusible alloys are used for filling safety-plugs—it is found that their melting-point is often considerably raised by long exposure to the heat. The exact cause of this rise



in the melting-point does not appear to be clearly known. It has been suggested that the metals composing the alloy are gradually separated or crystallized out from one another by the prolonged action of heat. However this may be, it is certain that pure Banca tin is a much more reliable material to use for filling. As tin is an element, its melting-point remains constant, and it is low enough, 420° Fah., to adapt it perfectly for use in fusible-plugs. In order to prevent delay, in case a plug should melt out, all owners of boilers should see to it that extra ones are constantly kept on hand so that they can be put in place at short notice.

NATIONAL ASSOCIATION MATTERS.

The Executive Committee of the Millers' National Association met at the Grand Pacific Hotel, Chicago, on August 12th, in response to a call issued by President F. L. Greenleaf. Owing to the unavoidable absence of the President, Mr. C. B. Cole, of Chester, Ill., occupied the chair. A. R. James, of Buffalo, N. Y., was elected chairman of the Executive Committee, vice Alex. H. Smith, resigned. C. B. Cole, of Chester, Ill., Geo. H. Plant, of St. Louis, Mo., and A. C. Loring, of Minneapolis, Minn., were elected members of the Sub-Executive Committee, to fill the vacancies created by resignations of H. L. Halliday, Illinois, Alex. H. Smith, Missouri, and F. L. Greenleaf, Minnesota, the last named gentleman having been elected to the Presidency of the Association. It was decided to appoint a committee of three to review the constitution of the Millers' National Association.

Consideration was given to a number of patent suits which are at present threatening, and instructions were given regarding steps to be taken for the protection of members. In reply to inquiry as to the protection afforded under agreement between the Consolidated Roller Mill Company and the Association, made March 9th, 1887, Mr. Seamans stated

that the Consolidated Roller Mill Company thereby licensed all roller-mills in use at that date by millers who were then members, in good standing, of the Millers' National Association, and that all members were notified accordingly, with advice that the Association would not defend any suits which might arise from the future purchase of roller-mills outside of this agreement.

A communication was read from the Secretary of State of the United States, calling attention to the International American Congress to be held in Washington, D. C., October 2d, 1889, giving in detail the objects of the congress and soliciting any suggestions that the association might be pleased to offer. The importance of this meeting to the milling interests of the United States was remarked, and it was resolved to appoint a committee, consisting of three members from each milling state, to call the attention of the Governors of their respective states to the desirability of sending delegates to this congress, and request that delegates be named strongly to represent the milling industry of our country.

The report of the committee on Millers' Export Bill of Lading, appointed at the last annual convention of the National Association, was received and the committee discharged. A new committee, consisting of Messrs. A. C. Loring, Wm. Sanderson, Chas. Espenschied, Louis Fusz and E. O. Standard, was appointed to take the matter of this Export Bill of Lading in hand and report progress at the next meeting of the Executive Committee. A report was received regarding detail work of the "Central Bureau" and instructions given by the committee regarding the same. About half of the members of the present Executive Committee are new men, and a strong desire is manifested to infuse new life and activity into the work of the organization and still further to extend its field of usefulness to members. The report of membership showed a very encouraging increase in number of firms and aggregate units of capacity represented.

WHEAT-GROWING IN IMAGINATION.

Wheat in solid form, either as grain, flour or bread, would seem to be a purely unstimulating and non-exciting article, and yet it inspires a good deal of disable-bodied frenzy among the untutored journalists who take it as a text for articles as clear as mud. For instance, here is the "Courier-Journal," of Louisville, Ky., talking about wheat-growing in the Northern United States and Canada in the following style: "Our Northwestern farmers are growing alarmed at the formidable opposition the Canadian Northwest is beginning to offer them in wheat-growing, and there is good cause for their disquiet. Each year the center of wheat-raising on this continent is pushed further north, until now Minnesota and Dakota are the southern border of the great productive belt, where the finest wheat in the world is grown, and the yield to the acre is greatest. Wheat thrives well in a very cold climate and has proven the salvation for the Northwest, not the Northwest of our own early history, but that more distant Northwest which includes the top row of states and territories of the Canadian plains even up to the Arctic Circle. In former days this region, excepting the most southern portions, was thought uninhabitable save by a few scattered Indians and the voyageurs, but it has now been discovered that the climate is tempered by the slope of the soil, mountain chains and other conditions, and it is by no means so biting as was originally thought, although it is undoubtedly more severe upon the human constitution than regions further south. It has also been discovered that the larger part of the great wheat-belt is not in the United States, but in Canada. The Canadian Northwest, between the Rocky Mountains and the stony wilderness of Ontario, embraces over a million square miles, nearly all of it suitable to the production of hard grain, with a soil whose richness is said to be unexampled. That region, although traveled over for 200 years by the hunter, the trapper and the voyageurs of the Hudson Bay and Northwest Fur companies, was an unknown land to the civilized world. It was supposed to be a sterile wilderness. Its agricultural capabilities were not dreamed of. Only in the last half dozen years have its pos-

sibilities been revealed, and it is now estimated that with proper development the Valley of the Saskatchewan could support all the present population of the United States."

Kentucky may like and may thrive upon fodder of that sort, but all the same it is fool-talk of the fooliest sort. Why? 1. Because not a single wheat-grower along our northern frontier has either felt or feared the "formidable opposition" of Canada in wheat-growing. 2. There is no cause for "disquiet." The Canadian yield has never been "formidable." It does not compete with the American grain, as the American duty of 20 cents a bushel forbids competition. 3. The center of wheat-growing on this continent has reached its northern limit, and Dakota and Minnesota are its northern, not its southern, limit. 4. Wheat does not "thrive well in a very cold climate." In August, 1888, a temperature of 30 degrees in Manitoba wiped out 75 per cent. of the wheat, instead of causing it to "thrive," and the same not "very cold climate" wiped out 30,000,000 bushels or more of wheat in Dakota and Minnesota. 5. If there be any truth in figures of acreage, average yield and total yield of wheat, the wheat-growing sections of the United States are to-day just where and what they have always been. American yields range as high as 72 bushels to the acre and are not surpassed in the world. 6. The "slope of the soil, mountain chains and other conditions" do not atone in the Canadian wildernesses for extreme northern situation, and the frenzied Kentuckian who can, even when hilarious under the sway of Kentucky whiskey, imagine the 65,000,000 people of the United States supported in the Valley of the Saskatchewan, is easily capable of believing that the lunar orb is manufactured from a caseous substance of emerald hue. 7. The "formidable opposition" offered by Canada, or Manitoba, may be "sized up" by quoting the yields of wheat. Last year Manitoba grew about 4,000,000 bushels of fair wheat, on 550,000 acres of land, and nearly as much more of poor wheat. In 1887 she claimed 15,000,000 bushels and scraped up nearly 9,000,000 bushels. Such yields must be perfectly dreadful to a neighboring country whose crop ranges from 415,000,000 to 512,000,000 bushels! During the past year our northern wheat-growers and millers have been supplying both wheat grain and flour to our "formidable" Canadian opponents. 8. Our Kentucky neighbors may accept it as a settled fact that we possess all the northwestern wheat lands on this continent that may be relied upon to ripen a crop. Even our northern wheat section loses a crop on the average once out of three times, and in Manitoba the loss averages three times out of five. 9. No important section in this country has abandoned, or proposes to abandon, wheat-growing. This Northwestern-Manitoba-Assiniboia-Saskatchewan-Arctic-Circle-Greenland-North-Pole wheat-growing bugaboo may loom up appalling to the Kentucky imagination, but, so long as 620,000 acres of the only land in the Canadian Northwest fit to grow wheat at all can turn out only 3,000,000 or 4,000,000 bushels in a year, the bugaboo will appear merely pasteboard and tinsel to the near-by northern wheat-growers.

CHEERFUL CHESTNUTS.

Boarder—I wish you wouldn't make such affectionate pies, ma'am. Landlady—Affectionate pies! Pray, what kind's that? Boarder—Why, this gooseberry pie's so thin that the crusts are actually stuck on each other.—*British Baker*. He was scientific, and he said to the waiter: "Bring me a decoction of burnt peas, sweetened with glucose, and lightened with chalk and water." And then the waiter looked pityingly at him and yelled vociferously: "Coffee for one!"—*Morbid Ex*. Wanted—Four hundred millions of step-ladders, to be used in husking Nebraska's corn.—*Omaha World-Herald*. A place-hunter named Corn has walked from Baltimore to Washington. The attention of Secretary Rusk should be directed to this cornstalk.—*Harrisburg Patriot*. The "ticker" is a great moral instrument and must not be suppressed. It transforms gambling into "business."—*Puck*. The only argument in favor of corn as the national flower is that it furnishes the national juice.—*Chicago Journal*. The biggest trust ever known was the famous corn trust formed

by Joseph in the land of Egypt many years ago. The time has been so very long that most of our "oldest inhabitants" have forgotten all about it.—*Arcadia Sentinel*. When a grain-field has got about all it can hold it is ready for some mower.—*Glens Falls Republican*.

MILLING PATENTS. PULLEY.

407,367. Peter McNaughton, Kalamazoo, Mich., assignor to Chas. Bird and Erastus W. Crane, same place. Filed Feb. 14, 1889. Serial No. 299,906. Dated July 23, 1889.



CLAIM 1. In a split pulley, the described hub, consisting of two semi-cylindrical castings the inner face of each of which is provided on one side of a central transverse annular groove with a single recess and on the other side of such groove with two seats or recesses, breaking joints with each other and adapted to receive bearing-blocks to be interposed between the hub and shaft.

2. The hub composed of two sections provided interiorly on opposite sides of a central transverse line with projecting bearings so arranged as to break joints with each other and adapted to bear against the shaft.

3. The hub composed of two sections provided on their inner faces with central transverse grooves, and having on opposite sides of said grooves projecting bearings so arranged as to break joints with each other.

4. The combination, with the semi-hubs having outwardly-extending arms or spokes provided at their outer ends with rings, as herein described, of the rim or flange the material of which completely fills the said rings at the outer ends of the spokes.

5. The combination, with the semi-hubs having outwardly-extending arms or spokes provided at their outer ends with rings and circular perforated offsets adjoining said rings, of the rim the material of which completely fills the said rings, and the transverse fastening-bolts passing through the perforated offsets.

Among the patents granted August 13, 1889, are the following:

- Leroy Atkins, Trenton, Mo., No. 408,682, a grain-steamer.
- Eben B. Wilsey, Aurora, Ill., No. 408,780, a combined flour chest and sifter.
- Jas. F. Winchell, Springfield, O., No. 408,781, a grinding and crushing mill, assigned to the Foos Mfg. Co., same place.
- Jos. S. Ash, Canal Winchester, O., No. 408,787, a dust-collector.
- Jas. A. Woodbury, Winchester, Mass., and Edward F. Woodbury, Boston, Mass., No. 408,907, a dust-collector.
- Cyrus T. Hanna, Pittsburgh, Pa., No. 408,914, a bolting-reel.
- Benj. N. Rethy, Anna, Ill., No. 408,928, a flour-chest.
- Orville M. Morse, Jackson, Mich., No. 408,987, a dust-collector.
- Robert L. Downton, St. Louis, Mo., No. 409,025, a dust-collector.

POINTS IN MILLING.

AMONG the milling novelties shown at the Paris Exposition is a mill, shown by Dayde and Pille, of Creil, France, working on M. E. Guillaume's system of gradual reduction by lines instead of surfaces. This is wholly a granulating system, no rolls being employed, and the mills are very small. Each mill is composed of two pairs of discs driven by one horizontal shaft, one belt, and built in one frame.

BRAULT, Teisset and Gillet, of Paris and Chartres, France, show a combined mill and scalper for small mills. This consists of three pairs of cylinders placed one over the other, each pair having its mechanism separate, as well as an arrangement for securing the parallelism of the rolls. Below each pair of rolls is a scalping-sieve, which takes the broken wheat from the rolls, and after sieving it passes it on to the

next pair. Each sieve is driven separately from its own pair of rolls.

J. HIGNETTE, of short-system fame, exhibits a stoner, a new decorticator, a vertical centrifugal for bran and flour, and a flour and bran sacking machine, which also weighs the material going through it. The vertical centrifugal is very like a brush-machine in form and consists of a circular cylinder working inside another circular cylinder covered with silk. The outer casing is a fixture, while the inner cylinder runs at from 400 to 500 revolutions per minute. Around the running cylinder are fixed sheet-iron continuous screws, which give a rapid ascending movement to the material to be bolted. By this movement the material is raised from the bottom to the top of the machine, and at the same time is thrown outward against the outer covering, of wire or silk as required, the sifted material falling in the hoppers, while the tails come off at a side tube. The quantity done by this machine on bran per i.h.p. per hour is about 6 barrels. M. Hignette claims for this machine principally the saving of room and the advantage of having the tails delivered at the top of the machine, thereby saving elevators and worming. The new "Balance" bolt is also exhibited by this firm. This machine is an improvement on the ordinary bolt, as it consists simply of an augmentation of sieve surface, and surface to be covered by the material that requires sieving without employing centrifugals running at a high speed. The greater working surface is obtained by surrounding the reel-shaft with several chambers covered with silk, generally four in number, and in dividing the material to be bolted by a better distribution over the sieving surface. A very good idea is formed of this machine when one says it is an ordinary reel, cut into quarters, the triangles forming the sectional area of the four chambers. These chambers are all of equal weight, and while one is ascending the other is descending. One chamber, therefore, balances the other, whence the machine gets its name. Mr. Hignette claims for his machine that it has the capacity of three ordinary reels; that it occupies very little place in relation to the work done by it; that it takes very little power to drive owing to the chambers balancing one another; and that there is no vibration, and consequently very slight wear and tear of coverings.

MR. BRUET shows a novel little machine designed for the work of splitting the wheat down the crease without doing any thing further than loosening the germ, and getting rid of the crease-dirt. This splitter consists of 2 vibrating trays and 2 rollers with thin circular knife-blades at the same distance apart as the center of the grooves. The trays are on the incline (about 20°) and have a movement in the longitudinal sense of about 2 millimeters. The wheat berries are fed into the grooves from a hopper and gradually slide down one after the other till they come to the revolving knives, where they are cleanly cut in two and fall on to a sieve, which extracts the dirt and germ and tails over the split wheat ready for the next break. This machine, although small, can do 12 barrels per hour, necessitating an expenditure of from $\frac{1}{2}$ to $\frac{3}{4}$ h. p. It is about 4 feet 10 inches long by 4 feet 6 inches wide and 5 feet 6 inches high. A very clever arrangement in the hopper regulates the feed to the grooves which receive the berries and always deliver them on to the trays in their longitudinal sense with the crease at the top, and the depth of the cut can be regulated to a nicety so as either to cut the grains quite in two or leave them joined by the skin.

MR. MILLOT, of Zurich, Switzerland, shows a triple wheat-cleaner, consisting of a scourer at the top, a fluted cast-iron cone for breaking earth and smut-balls in the center, and a conical brush at the bottom, all mounted on one shaft and situated vertically one below the other in the order mentioned. The scourer cover is made of flat woven steel, which M. Millot says he finds better than the round, and each of the three parts of the machine are aspirated separately. He also shows a garlic separator, consisting of 2 rollers in cast-iron, one being covered with sheet rubber and the other

plain. The grain is fed from a hopper as in a roller-mill between these two rollers. The garlic, being soft, is squeezed out flat, while the wheat embeds itself in the rubber and passes without harm. A current of air is afterwards used to separate the two products. A new gravity middlings-purifier is also shown, which consists of a triple kind of water-wheel arrangement. These three wheels throw the middlings up into the air in alternate streams, each stream as it falls being subjected to aspiration.

ONE great drawback to the value of the milling-machinery exhibit is the fact that the machines are either standing still or running empty. That fact makes it necessary for the visitors to ask questions and to doubt the truthfulness of the claims and representations made by those in charge of the exhibits. The visitor may doubt the word of the exhibitor that a machine will do some of the wonderful things set forth as their regular achievement, but, if the machine is running full and actually doing the work claimed, then dissent or disbelief on the part of the visitor is impossible. The value of a model running full was never more forcibly illustrated than in the case of the Smith model roller mill at Buffalo, in June, 1888. In an exposition like that in Paris it might be unpleasant to do actual work with the milling-machines, and, in the case of known machines, it would not be necessary. In the case of novelties there is a difference. Talk will make observers doubtful about them, but actual work would at once settle all doubts.

OUR VOLUMINOUS VOCABULARY.

The New York dictionary of the English language, called the "Century," contains over 200,000 words. Sarcastic individuals are inquiring what earthly use there can be of so many words, when the most voluble writer can find use for only 10,000 words at the most.—Van Fredenberg in THE MILLING WORLD.

Of course our esteemed friend does not take himself into account when he says "the most voluble writer can find use for only 10,000 words." The Century dictionary with its 200,000 words will furnish but a scant supply for Van, with which to dish up the ordinary news of THE MILLING WORLD. But when he gets on a specially interesting theme, he will coin new words at the rate of two per second, and when he colligates them the result is something of a surprise to dictionary makers.—Port Jervis, N. Y., "Union."

The Baltimore Journal of Commerce will issue September 6th next its regular annual review of the grain trade for the crop year ending August 31st, 1889. It will contain, besides exhaustive market reports, valuable trade statistics and historical sketches of the mercantile and manufacturing interests of the City of Baltimore, profusely illustrated. The steady advance of the Journal of Commerce is a subject for congratulation to its proprietors, and no effort will be spared in making this usual September annual the best ever published. Full data from the records of all the leading exchanges and government departments will be found carefully compiled therein. It will be about 50 pages, printed in the highest style of the typographic art, with a handsomely embellished cover. A copy of this edition should be in the hands of every miller and grain dealer.

SPECIAL NOTICES.

BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,

Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

TOLEDO MILL PICKS AND STONE TOOL MFG. CO.

Manufacturer

and Dresser of

MILL PICKS.

Made of the best double-refined English cast steel. All work guaranteed. For terms and warranty, address, GEO. W. HEARTLEY, No. 297 St. Clair Street, Toledo, Ohio. Send for Circular.

N. B.—All Mill Picks ground and ready for use (both old and new) before leaving the shop. No time and money lost grinding rough and newly dressed Picks. All come to hand ready for use.

ALSO MANUFACTURERS OF

Shafting, Pulleys, Hangers, Coupling, Machine and Jobbing, Etc., Etc.



A CURIOUS COMPUTATION.—An electrical writer has calculated that the firing of a small pistol sets free about 600 foot-pounds of energy, while a watch consumes about one 54-millionth of a horse-power, the energy of the bullet being sufficient to keep the time for two years. An Edison telephone transmitter requires about a thousandth of the energy in a watch; it would therefore be worked for 2,000 years on the energy exerted in the pistol. A lightning flash of 3,500,000 volts and 12,000,000 amperes, lasting one 20-thousandth of a second, would run a 160-horse-power engine for ten seconds.

GENERAL NOTES.

FROM a communication in the London "Chamber of Commerce Journal" the annual cost of taking out patents in the principal countries of the world is taken as follows:

Country.	Term of years.	Fees.	Average annual cost.
United States.....	17	\$ 35.85	\$ 2.00
Canada.....	15	61.50	4.00
Cape Colony.....	14	186.00	13.15
India.....	14	263.10	18.75
France }.....	15	300.00	20.00
Italy }.....			
Belgium }.....	20	420.00	21.00
Spain }.....			
Argentine Republic.....	15	358.75	24.00
Austria.....	15	367.50	25.50
Russia.....	10	250.00	25.00
Brazil.....	15	300.54	54.00
Great Britain.....	14	770.00	55.00
Germany.....	15	1,320.00	88.00
Average.....	15.3	\$418.00	\$27.50

MESSRS. H. V. & H. W. Poor have now in preparation the twenty-second annual number of their famous "Manual" of American railroads, in which will be given in full detail the financial condition and results of operation of all the railroad companies for 1888. Statements, revised by each company prior to publication, will be given for about 2,500 companies. The forthcoming edition of this standard work, marking an important epoch in the history of the work, as well as of the vast interest of which it is the official hand-book, will be the most elaborate volume of the series. The *Manual* is known as the official embodiment of the reports of all the railroad companies in the country. Briefly outlined, the contents of the work are: 1. Introductory statements showing in tabular form the mileage, equipment, capital stock, funded and floating debts, cost of road and equipments, investments, train mileage, passenger and freight statistics, earnings, expenses, interest and dividend payments of the entire railroad system of the country, arranged by States and groups of

States. The completeness of these tabulations has secured for the *Manual* the prestige of official recognition in all statistical circles. 2. Statements showing for a series of years the total mileage, construction, stock, debt and cost of the railroads of the country, the total mileage of all the railroads of the world and numerous other selected statistics. 3. Statements showing for eight years the range of prices of the stocks and bonds dealt in at the four leading Stock Exchanges of the country, New York, Boston, Philadelphia and Baltimore, with an elaborate statement showing in a unique and original manner the rates of dividends paid by all the railroad companies in the country during the same period. These tables are invaluable for investors and have received unstinted praise. They were first introduced in the *Manual* for 1886. 4. Detailed statements for every railroad company in the country. These are the most important feature of the book, comprising 1,000 of its 1,700 pages. Following are the important points of the statement: Terminal points and mileage of main lines, branches, leased lines; second track, sidings and other tracks; gauge, weight of rails and length of steel rails; details of equipment; complete history; terms of leases or other contracts; operations, earnings for last fiscal year, and (for all larger corporations) comparative tabular statements for eight years; detailed balance sheet; statement of funded debt, with description of security, rate of interest, place of payment of interest, names of trustees and date of maturity; statements of all dividends paid since organization; time of holding annual meeting; names and addresses of directors and of general officers; location of general and transfer offices. For most companies, the statements printed in the *Manual* are the only detailed ones furnished to the public, and the *Manual* has thus become the only medium by which an accurate knowledge of their affairs can be obtained. 5. Statements of the funded debt of the United States and of the several States, giving dates of issue, maturity, interest rate, date of interest payments and amounts of each several class of bonds. The directory of railway officials contains lists of officers of all steam railroad companies in the United States and Canada; officers of all street railroad companies in the United States and Canada; officers of tram and lumber railroads and boards of railroad commissioners. To these are added special lists of general superintendents, chief engineers, master mechanics, master car-builders, master car-painters, general freight and passenger agents and purchasing agents. An alphabetical index to the names of all the officials above mentioned, with a convenient system of reference, showing lines with which each is connected; and an alphabetical index of cities and towns, by means of which can be ascertained the names of all officials in any particular city or town at once. The price of this great work is \$6. Address Messrs. H. V. & H. W. Poor, 70 Wall street, New York, N. Y.

The Practical Publishing Co., No. 21 Park Row, New York, N. Y., has just sent out a second enlarged edition of "Hints on House Building," by Robert Grimshaw, the well-known mechanical authority. The volume is a neat and valuable one, containing valuable suggestions on the important subject of house building. Address the publishers for terms.

The Canton Cabinet Filing Case Company, Canton, Ohio.

MANUFACTURERS OF

The New Buckeye Document Case & Letter File; Also All Kinds Office Furniture

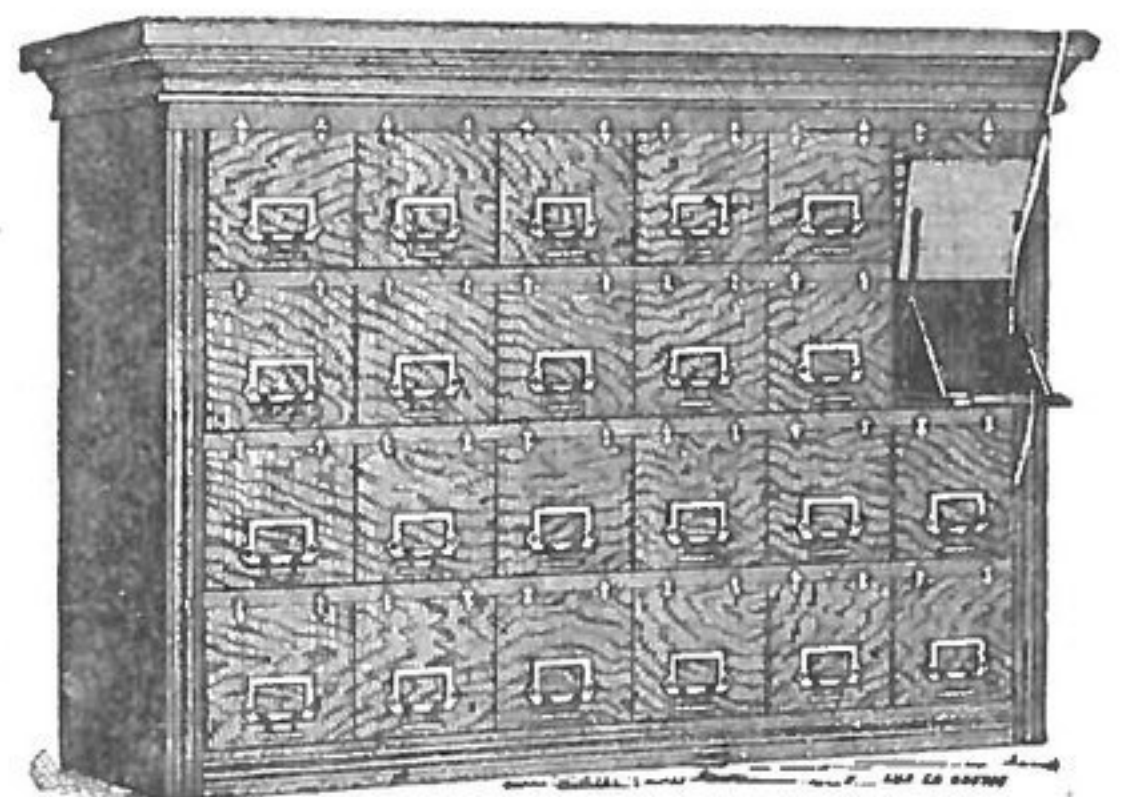


NO. 8 Represents one side of one of our Revolving Cabinet Letter Files and Document Cases Combined. It contains 30 Document Drawers and 8 Letter File Drawers. In filing letters we use first VOWEL of name on front of drawer, and LETTER FOLLOWING first VOWEL on Index Sheet within drawer. We also make more exhaustive systems which contain from 6 to 100 or more Filing Drawers.

NO. 1 Represents one of our small Document Cabinets, for use on desks or brackets. Action of drawer can be seen in the cut. When front is raised inner drawer comes forward, exposing contents of drawer for inspection.

Our Cabinet Files are Conceded to be the Most Convenient of Any in the Market. They are Compact, Simple, Complete, Durable and Ornamental.

SEND FOR PRICE LIST AND CATALOGUE.



NO. 1.

COMPOUND Condensing or Non-Condensing.
16 SIZES, 5 to 500 H. P.
Not yet equaled by any form of Engine for
HIGH FUEL DUTY AND SIMPLICITY.

STANDARD 13 Sizes in Stock.
5 to 250 H. P.
3000 in use in all parts of the Civilized World.

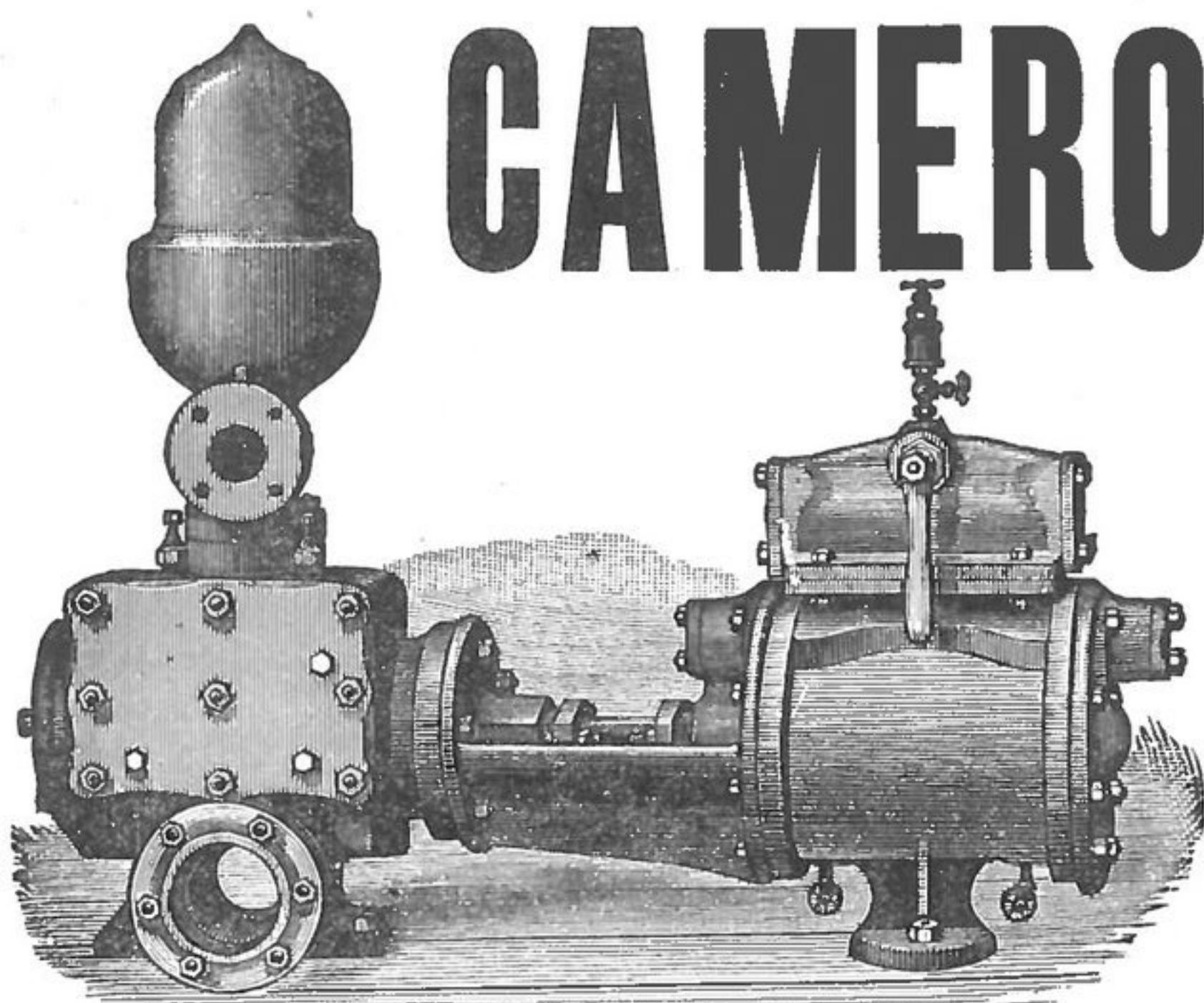
JUNIOR 6 Sizes in Stock,
5 to 50 H. P.
An Automatic Engine cheaper than a Slide Valve.
WELL BUILT. ECONOMICAL. RELIABLE.
Over 300 Sold the First Year.

All the above built strictly to Gauge with
INTERCHANGEABLE PARTS.
REPAIRS CARRIED IN STOCK.
SEND FOR ILLUSTRATED CATALOGUES.

**WESTINGHOUSE
ENGINES**
The Westinghouse Machine Co.
PITTSBURGH, PA. U.S.A.

**SELLING DEPARTMENT IN THE
UNITED STATES.**

New York,	17 Cortlandt St.	} Westinghouse, Church, Kerr & Co.
Boston,	Hathaway Building,	
Pittsburgh,	Westinghouse Build'g,	
Chicago,	156, 158 Lake St.	
Philadelphia,	608 Chestnut St. M. R. Muckle, Jr. & Co.	} Fairbanks & Co.
St. Louis,	302, 304 Washington Av.	
Kansas City,	312 Union Avenue,	
Denver,	1330 Seventeenth St.	
Omaha,	1619 Capitol Avenue, F. C. Ayer.	} Geo. M. Dilley & Sons.
Pine Bluffs, Ark.		
Salt Lake City,	259 S. Main St.	
Butte, Mont.	L. Granite St.	
San Francisco,	21, 23 Fremont Street, Parke & Lacy Co.	} The D. A. Tompkins Co.
Portland, Or.	33, 35 N. Front St. Parke & Lacy Mch. Co.	
Charlotte, N. C.	36 College St.	
Atlanta, Ga.	45 S. Prior St.	
Dallas, Tex.		} Keating Imp. & Machine Co. C. E. James & Co.
Chattanooga, Tenn.,		



CAMERON STEAM PUMP

THE STANDARD OF EXCELLENCE.

SIMPLE! COMPACT! DURABLE!

"NO OUTSIDE VALVE GEAR."

Steam, Air & Vacuum Pumps in Every Variety

FOR ILLUSTRATED CATALOGUE ADDRESS

THE A.S. CAMERON STEAM PUMP WORKS

Foot of East 23d Street, - New York.

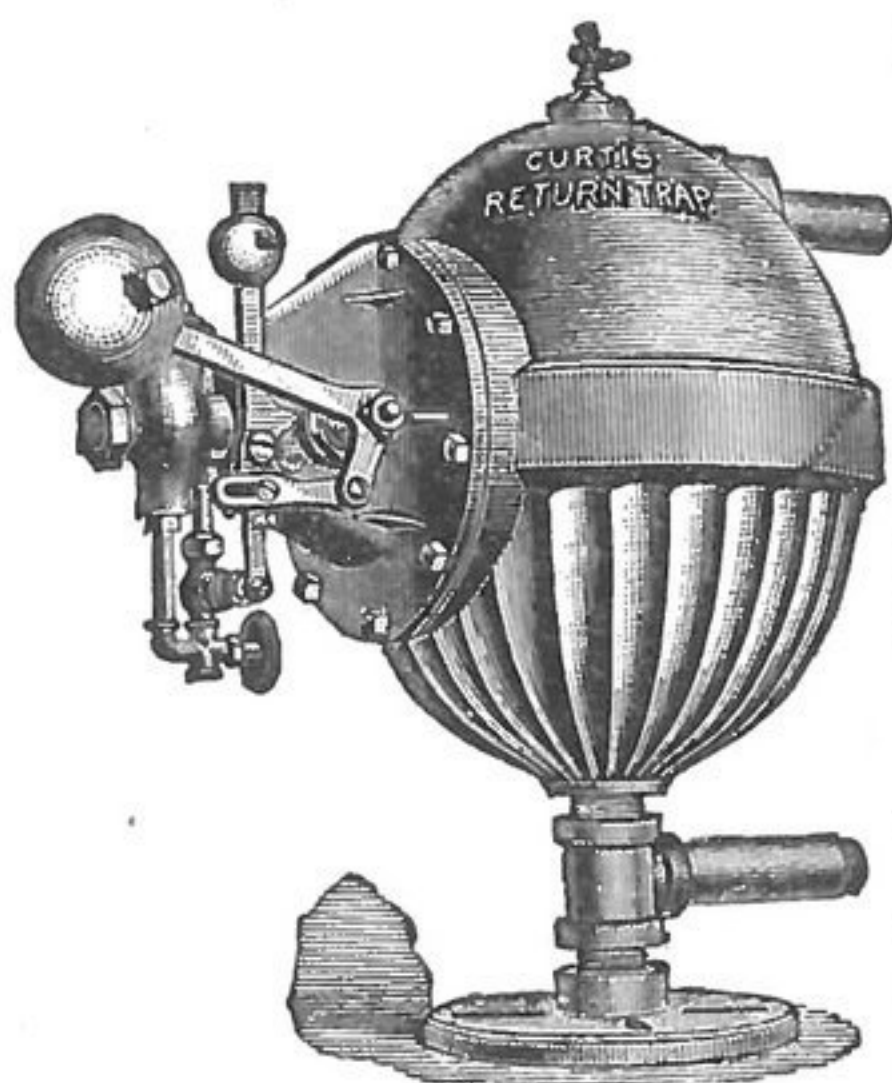
L. L. WHITLOCK,
Advertising Agent

FOR MANUFACTURERS.

TRADE JOURNALS A SPECIALTY.

P. O. DRAWER 5323. Boston, Mass.

As Agent for Advertisers instead of Papers, I obtain
the Best Rates Possible for my Customers.



THE CURTIS

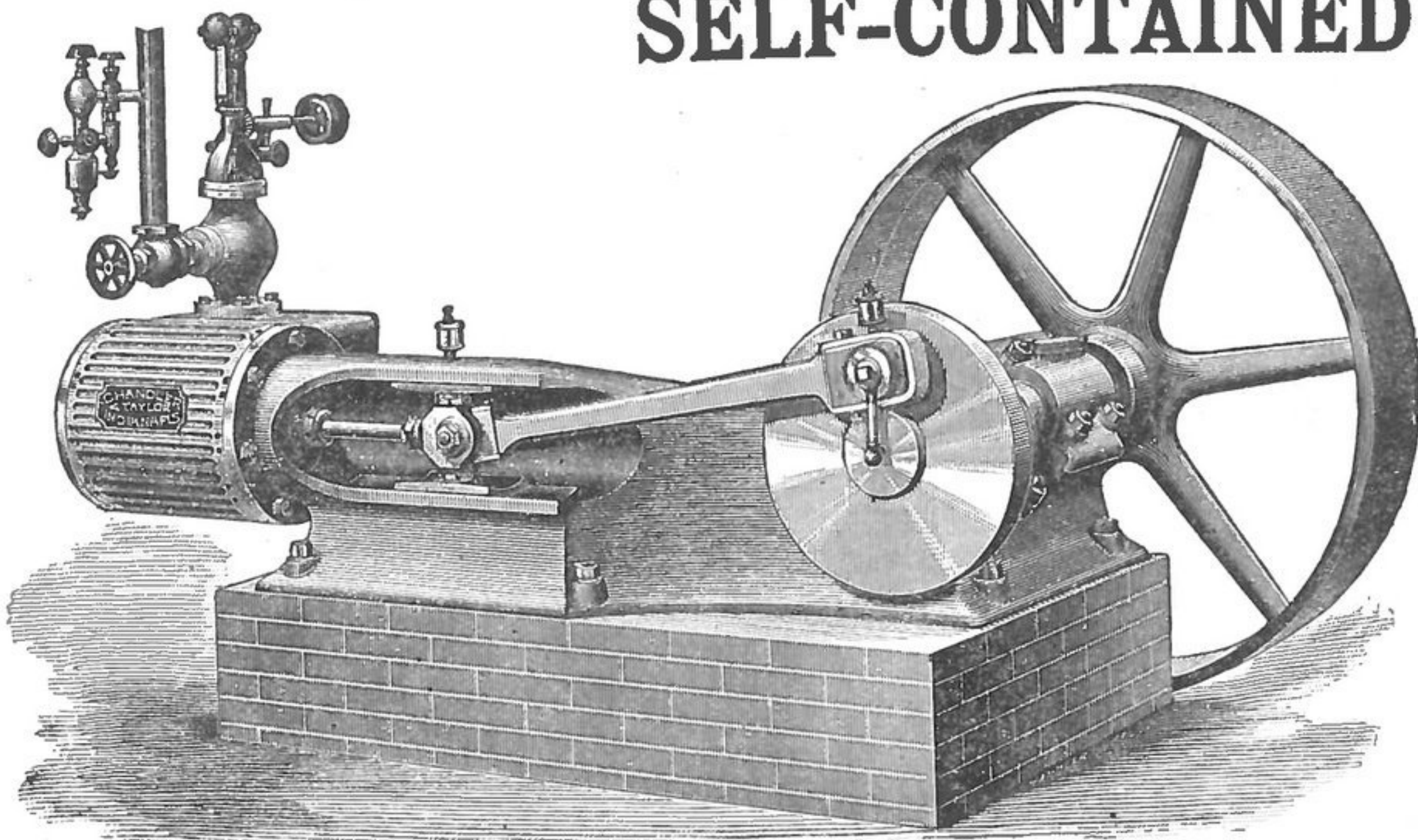
PATENT RETURN STEAM TRAP.

IT is noiseless, positive, rapid, will return all condensation back into the boiler, and works equally well in connection with reduced pressure or exhaust steam, also when the return is below the water line of the boiler.

THE CURTIS REGULATOR COMPANY,
No. 74 BEVERLY ST., BOSTON, MASS.

GENERAL AGENCIES.

NEW YORK, 109 Liberty st.	CHICAGO, 218 Lake st.
PHILADELPHIA, 2035 N. Front st.	ST. LOUIS, 511 WALNUT ST.
MINNEAPOLIS, 210 S. Third st.	NEW ORLEANS, 21 Union st.



SELF-CONTAINED STEAM ENGINES

**Stationary or
Semi-Portable.**

High Standard Maintained.
Prices Greatly Reduced.

**WRITE FOR NEW ILLUSTRATED
CATALOGUE NO. 32.**

Chandler & Taylor Co.

Indianapolis, Ind.

Engines, Saw-Mills and Drain Tile
Machinery a Specialty.

NOTES & NEWS

J. L. Howell, Howell, Ark., built a grist mill.
 S. Short, Lewisville, Ark., builds a grist-mill.
 Bolivar, Tenn., men project a roller flour-mill.
 Kelly & Yow, Pine Hill, Ala., built a grist-mill.
 B. G. Manor, New Market, Va., remodels to rolls.
 W. D. Arnold, Lexington, Ga., started a grist-mill.
 D. Higley, Fayetteville, N. Y., builds a barley mill.
 J. T. Crum & Son, Sandy, W. Va., remodel to rolls.
 B. S. Woodman, Langhorne, Pa., remodeled his mill.
 L. A. Hare, Lexington, Tenn., will build a grist-mill.
 J. M. Tapper, New Baltimore, Pa., remodels his mill.
 L. M. Goodley & Co., Scottsville, N. Y., build an elevator.
 The Hodges Milling Co., Watkinsville, Ga., built a grist-mill.
 A. R. & W. J. McQuiston, Jamestown, Pa., remodel to rolls.
 Wm. R. Rondeburg & Son, Harrisonburg, Va., remodel to rolls.
 The Texas and Pacific Coal Co., Thurber, Tex., build a grist-mill.
 The Three Rivers Milling Co., Paducah, Ky., improved their mill.
 D. S. Boyer, Hagerstown, Md., is building a 50-barrel roller flouring-mill.
 The G. Barnitz flouring-mill, Carlisle, Pa., has been improved and refitted.
 J. C. Saylor, East Coventry, Pa., remodeled his mill to 30-barrel capacity.
 A. V. Morris & Sons, Akin, N. Y., have bought the Fort Johnson mill for \$7,000.
 Geo. M. Harter, Center Hill, Pa., has started his 2-break 4-roll mill successfully.
 The Pennsboro Roller Mill Co., Ellenboro, W. Va., have built a roller flouring-mill.
 D. M. Klepser & Co., Martinsburg, Pa., are building a 75-barrel roller flouring-mill.
 A. M. Newill, Champion, Pa., builds a 35-barrel short-system roller flouring-mill.
 Parsons, Clark & Clouser, New Bloomfield, Pa., are building a short-system roller mill.
 The Elk River Merchants' Mill Co., Prospect, Tenn., has been chartered to build a flour-mill.
 H. Braman's grist-mill, Kilawog, N. Y., burned; loss \$5,000; insurance \$3,600; fire incendiary.
 A farmer of Willow, Cal., planted his second crop of corn June 22, using seed grown this year.
 Cunningham & Williams, Scottsburg, Ky., will build a grist-mill at once; they want machinery.
 Dr. McClure, Batesville, Ark., has points on a proposed roller flour-mill to be built at that place soon.
 Raper Bros. & Thorn, Austinville, Va., will put roller machinery into their flour and corn-meal mill.
 The Anchor Flour Mills, Fort Worth, Tex., double capacity and build an 85,000-bushel grain-elevator.
 The Green County Farmers' Alliance, Mangum, Tex., will probably build a flour-mill in the near future.
 T. R. Wagner, Siluria, Ala., wants machinery for a grist-mill to be built on the site of one recently burned.
 J. Schneider and A. Benotsch, Harrison, O., have bought and will remodel and operate the C. P. Dick flour-mill.
 L. K. Lee, flour-mill, Valley Springs, Dak., has given chattel mortgages for \$10,000; his plant cost \$12,000 to build.
 W. M. Fielding and others, Luray, Va., have bought and will enlarge, refit and operate the flour-mill of the Luray Flouring Mill Co.

The Mammoth Spring, Ark., Water Power & Improvement Co. have points about a \$30,000 stock company now organizing to build a large flouring-mill.

Cutler & Co., North Wilbraham, Mass., are making extensive changes in their grist-mill; they add an oat-clipping machine with a capacity of 250 bushels per hour.

The Avery Stamping Co., Cleveland, O., say they don't know much about corrugating rolls, but can give a few pointers on corrugating elevator buckets and chains.

J. C. Brown, a farmer living near Shelbyville, Ill., claims the banner wheat yield of the State. He declares that he threshed 385 bushels from a six-acre tract, or an average yield of 64 bushels to the acre.

The regular annual meeting of the Pennsylvania Millers' State Association will be held at Chambersburg on the 17th of September. The first session will begin at 2 p. m., and will include the president's address, report of the treasurer and secretary, reports of the several committees, the enrollment of new members and discussions on the crops. At the evening session a full discussion on the breaks, the long and short systems and separations will be taken up by several experienced members. Aug. Wolf has offered the visitors a free excursion the next day to Hagerstown, Md., and a trip over the famous battle-field at Gettysburg, returning to the Blue Mountain House, at Pen Mar, at 5 p. m., where W. P. Leshner will give a social tea to all the members and their families. The visitors will return to Chambersburg about 10 p. m. All persons desirous of availing themselves of these offers should notify the secretary, Landis Levan, Harrisburg, Pa., by September 7th, so that full and complete arrangements for all can be made. On Thursday morning all who wish to see Luray Cave will have an opportunity of doing so, the rate for which will be \$3.30 from Chambersburg and return, including admission to the cave. All members attending will purchase a one way full fare ticket over to Cumberland Railroad, and will be furnished by the secretary at Chambersburg with an order for return trip at one cent per mile, making a rate of two cents per mile over that road each way. All persons using the Pennsylvania Railroad as far as Harrisburg can secure an order for reduced rates by applying to W. P. Leshner, Chamber of Commerce, Philadelphia.

COMMENDATORY COMMUNICATIONS.

ECONOMY IN PULLEY COVERING.

The following letter from Henry McShane & Co., iron and brass founders, of Baltimore, Md., to the National Pulley Covering Co., of the same city, explains itself:

BALTIMORE, MD., AUG. 14, 1889.

NATIONAL PULLEY COVERING CO.,

GENTLEMEN: On August 2 we put on two of your "covers." The main pulley was 26 inches in diameter with a 9-inch belt, making 105 revolutions per minute, and the counter-pulley was 36 inches in diameter with a 9-inch belt, making 100 revolutions per minute. We now find that, since putting on your covering, the main pulley makes 133 revolutions per minute and the counter-pulley 120 revolutions per minute.

Yours truly, HENRY MCSHANE & CO.

A PROPHET WHO IS CONFIDENT.

Prophet C. C. Blake, of Topeka, Kans., writes us under date of July 22 as follows:

"Blake's Annual of Weather Predictions for 1890 will be published and ready for delivery early this fall. It gives full details of what the weather and crop prospects will be till January 1st, 1891. On receipt of the price, \$2, I send a long confidential letter answering all questions and giving the gist of weather changes so that parties may know at once whether to sow wheat this fall, or whether they had better sell all their wheat and depend on spring crops. For the next eighteen months the weather changes will be so severe, sudden and unique that much better crops can be raised by knowing in advance what those changes will be. The enormous crops of all kinds in Kansas this year are proof of this, as they were sown in accordance with my calculations."



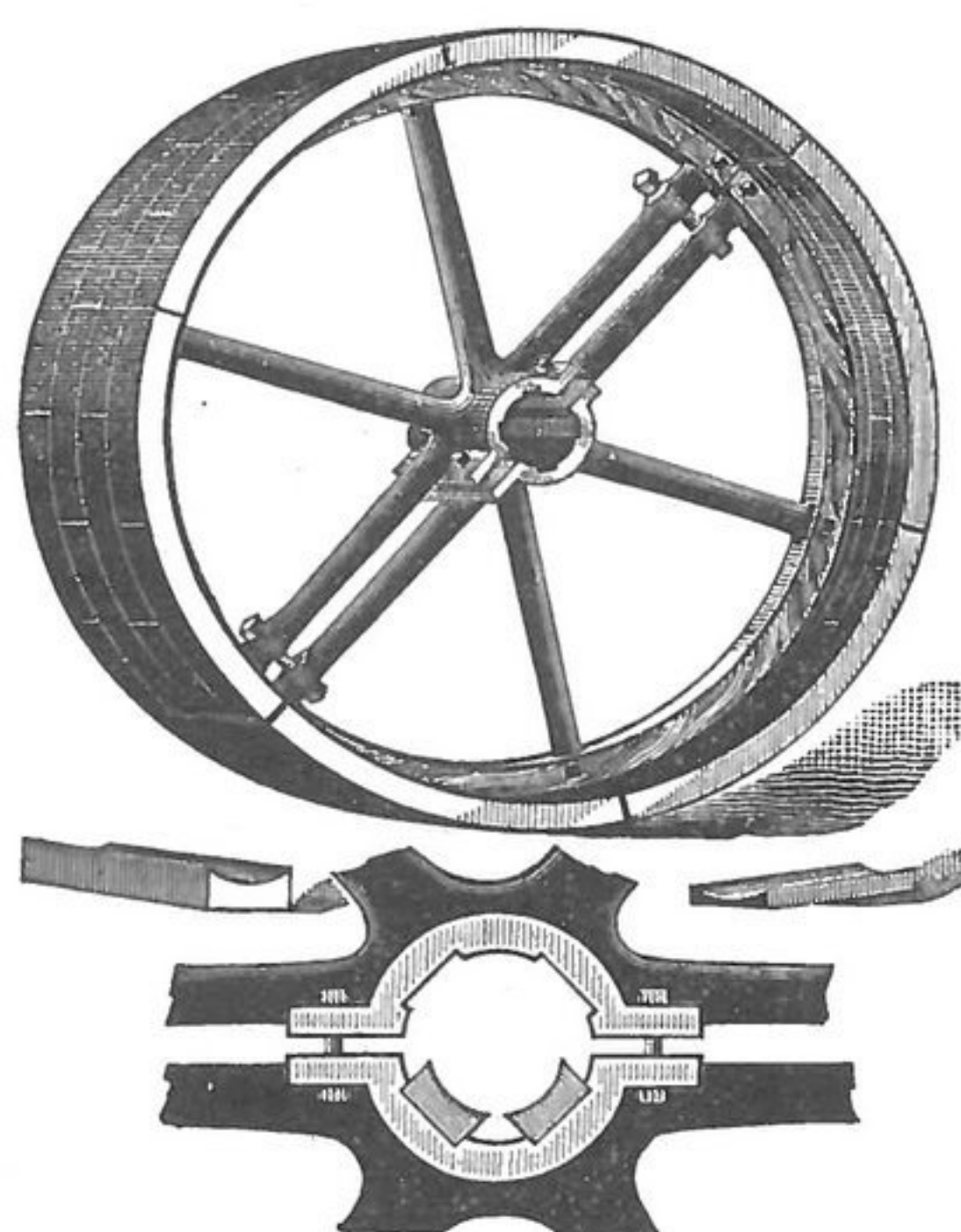
W.A. BINGHAM,
 MANUFACTURER OF
FLOUR SACKS.
 178 Duane Street,
 New York



THE BEST ARE THE CHEAPEST.

MILLERS' FLOUR SACKS A SPECIALTY.

THE PATRONAGE of the MILLING TRADE is MOST RESPECTFULLY SOLICITED.



BIRD & CRANE MFG. CO., KALAMAZOO MICH.

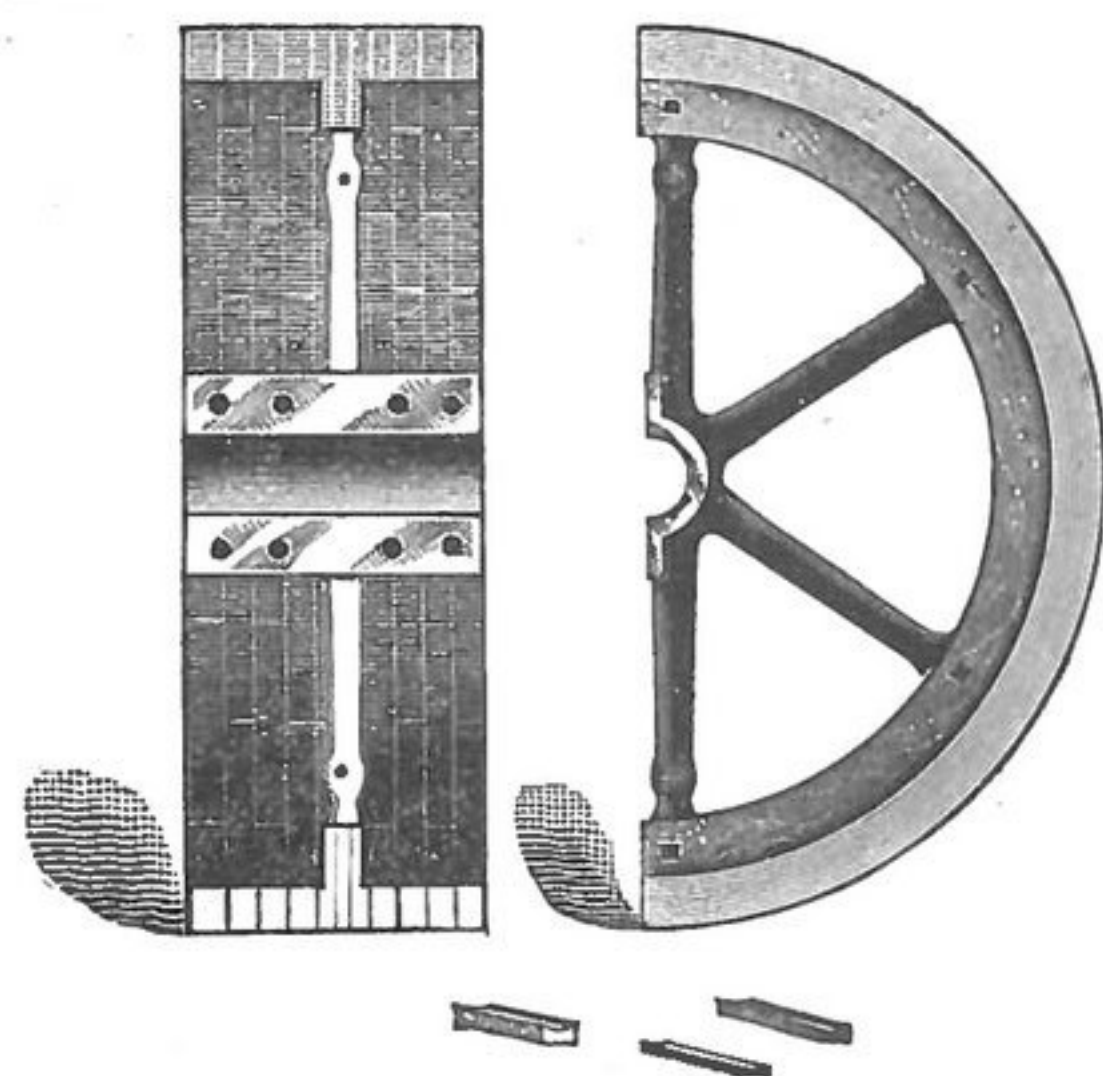
MANUFACTURERS OF PATENT

Wood Split Pulleys

WOOD RIM WITH IRON ARMS.

The Best Pulley on Earth!

Is very easily and quickly adjusted to Shaft. Has Patent Iron Bushings Interchangeable, to Fit Different Diameters of Shafts. Has FOUR or SIX Bearings on Shaft. This fastening never slips. Every Pulley strongly built and perfectly balanced.



SEND FOR CATALOGUE AND PRICE LIST.

THE LADIES FAVORITE
THE LIGHT RUNNING
NEW HOME
THE FINEST SEWING MACHINE THE BEST
WOODWORK ATTACHMENTS
NEW HOME SEWING MACHINE CO. ORANGE - MASS.
CHICAGO, ILL. 28 UNION SQUARE, N.Y. SAN FRANCISCO, CAL.
ST. LOUIS, MO. ATLANTA, GA. FOR SALE BY DALLAS, TEX.

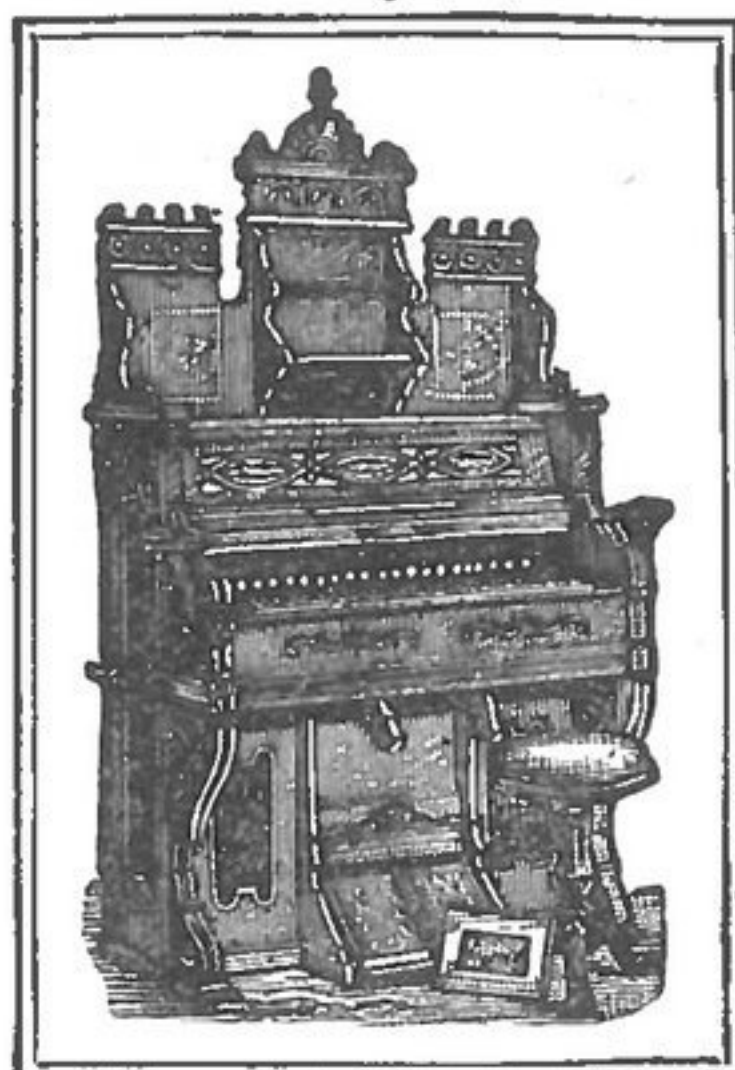
N. BUSSENDORFFER.

SHIPPERS
CAN SAVE TIME
TROUBLE
AND
CASH
BY USING
BARLOW'S
PATENT
MANIFOLD
SHIPPING
BLANKS. SEND FOR
SAMPLE SHEET & PRICES
BARLOW BROS. GRAND RAPIDS, MICH.

The BEST PIANOS and ORGANS IN THE WORLD

Are manufactured and sold for the least money by

THE BEST ARE THE CHEAPEST.



Write us for Illustrated Catalogue, Free.

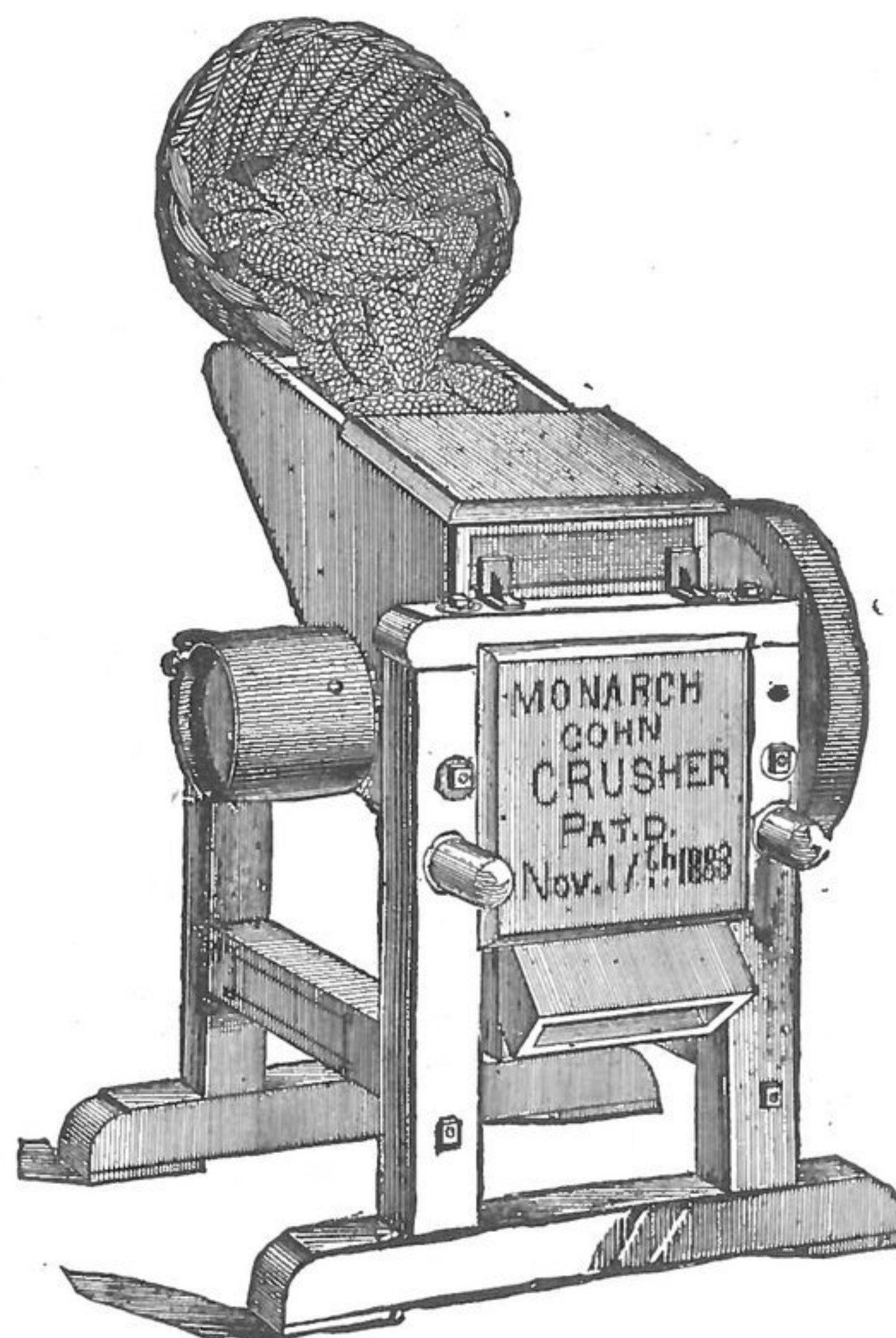
BEETHOVEN
PIANO ORGAN CO.
WASHINGTON, WARREN CO. N.J.

MENTION THIS PAPER.

WOOD ENGRAVING LITHOGRAPHY
THE DONNELL CO.

The Cincinnati Corrugating Co.

The Monarch Corn and Cob Crusher



Is the latest and best Corn and Cob Crusher in the World. It does away with all the objections of grinding cob. It has a greater capacity with less power than any other crusher made. It granulates the cob finer, enabling the buhrs or rolls to grind from 25 to 50 per cent. more feed than can be ground in the same time from corn and cob crushed in any other crusher. It does not jar the building like other crushers. It can be fed any way to suit user. It is made strong and durable in all its parts. There is very little about it to wear. The cylinder is constructed of steel saws placed on a mandrel separated by iron disks, and fastened with a strong nut. The saws can be taken off and sharpened if necessary. The saws run in an iron concave with teeth which retain the cob until it is cut fine. Write for circular and price-list of the Best Cob Crusher in the World. Address,

THE H. C. McCOOL MFG. CO.
PERRYVILLE - - OHIO.

EUROPEAN ECHOES.

ENGLAND, Wales and Scotland have harvested or are harvesting about 82,000,000 bushels of wheat. Ireland will swell the total to 84,000,000 bushels. The average yearly crop for six years has been 76,000,000 bushels.

THE French wheat crop, at first estimated at 360,000,000 bushels, is now thought to be about 288,000,000 bushels. Threshing has shown large deficiencies where great abundance was reported. The quality, at first reported superfine, is only generally fair.

ACCORDING to the "final report" on the Indian wheat crop, recently issued, the acreage sown to wheat in India this year was 26,381,765 acres, against an average of 26,508,000 acres for the past four years. The total estimated crop this season is 243,064,000 bushels, against an average crop of 268,992,000 bushels for the past four years. The deficiency this year is 25,928,000 bushels, compared with the 4-year average, and the quality is very bad generally, making the deficiency far more serious than the figures show it to be. The exports are set down at 41,552,000 bushels in 1886-7, at 25,272,000 bushels in 1887-8, and 32,888,000 bushels in 1888-9. The report concludes with the everlasting and inevitable boast that immense development in the Indian wheat business is sure to be seen in the very near future, as they are digging an irrigating ditch somewhere in the Punjab.

THE late harvest of wheat in India, officially reported, compares in detail in Provinces and States as follows, in tons of 2,240 pounds:

	1889. Tons.	1888. Tons.	1887. Tons.
Punjab.....	2,026,000	1,668,506	1,517,800
N. W. Provinces and Oudh....	1,475,000	1,907,000	1,732,050
Central Provinces.....	875,000	1,138,800	860,000
Bombay.....	588,000	862,475	500,000
Berar.....	150,000	154,727	133,419
Bengal.....	300,000	306,000	400,000
Rajputana.....	350,000	365,799	379,000
Central Provinces.....	500,000	508,408	500,000
Hyderabad.....	100,000	102,828	65,695
Mysore.....	1,000	752	1,244
Kashmur.....	100,000	133,323	133,333
	6,465,000	7,148,628	6,244,441

The 6,465,000 tons for 1889 are equivalent to 241,360,000 bushels of 60 pounds, compared with 266,882,000 in 1888 and 233,126,000 in 1887.

SAYS an English paper of recent date: There is every probability that in the near future large quantities of wheat will be imported from Morocco to the United Kingdom. It is interesting to note that the British Consul at Mogador, in a report on the agriculture of his districts, which has just been issued, says that wheat and barley are grown almost wholly for home consumption, the export to foreign countries being forbidden, with the exception of the quantities accumulated by the Moorish Government from tithes, which are sometimes shipped on Government account. The shipment, even coastwise, from one port of Morocco to another is only occasionally permitted, and then for a limited period. One of the conditions of these permits is that double the amount of the duty fixed by a convention of 1856, in case export is permitted, should be deposited with Custom's officials at the port of shipment and be returned only on the production of a certificate from the authorities at the place of destination that the grain has really been landed at a Moorish port. This greatly tends to diminish the cultivation of the finer cereals. Moreover, the duties, which were fixed in 1856, are quite disproportionate to present prices, if export were allowed. Wheat and barley in 1888 averaged respectively about 12s. and 4s. a quarter, and the Moorish duty, assuming them to have been exportable, would have been 16s. and 8s. a quarter. If permission were given to

export all grain, with a reservation to the Government of power to prohibit it in years of scarcity, much would be done to improve the condition of the agricultural classes and to benefit trade generally as well as the Government revenue.

THE London "Miller" of August 5 says: Golden sunshine has made the harvest fields change into the white and yellow tints that infer maturity and lifted up the heads of corn that had been bowed to the earth under the weight of July rain-fall. Better, much better, than they were a week ago, the wheat, barley and oat crops are falling before the reaper in the early districts of Middlesex, Sussex and Hampshire. August has given us one day, in the upper Thames Valley, of 85 degs. in the shade, and the fresh breezes have been strong enough to shake out of the lodged corn nearly all of the dankness from which there was danger. Of course, in some instances the last few bright days have come too late to repair the injuries done by bad weather a fortnight ago, and thus the few earliest samples of wheat seen are damp and imperfectly ripe, while the earliest rye, being harvested before the recent rain-fall, shows well-matured grain. . .

. . . Reports refer to fine white new wheat, offered from rubbed-out samples, being in fancy request at 40s. per quarter. But these early straws, thrown up in the markets to catch the direction of opinion, will scarcely show which way the wind of value will blow. It is the condition of the new grain that has to be ascertained rather than the quantity on offer. Millers are tired of the old stuff and will not readily take on with the new before testing it in various ways. From present aspects in England and France, really fine old samples of wheat, native or imported, are likely to keep appreciated; holders of such are still reserved, while the sweepings of the year remaining in farmers' and merchants' granaries are offered to the market on very low terms. . .

. . . Yet the verdict of the harvest has already been given over many important countries, where quantity and quality are estimated. But as these are selling countries, the merchants await the harvest verdict of ourselves and other buying countries before offering important contracts. . .

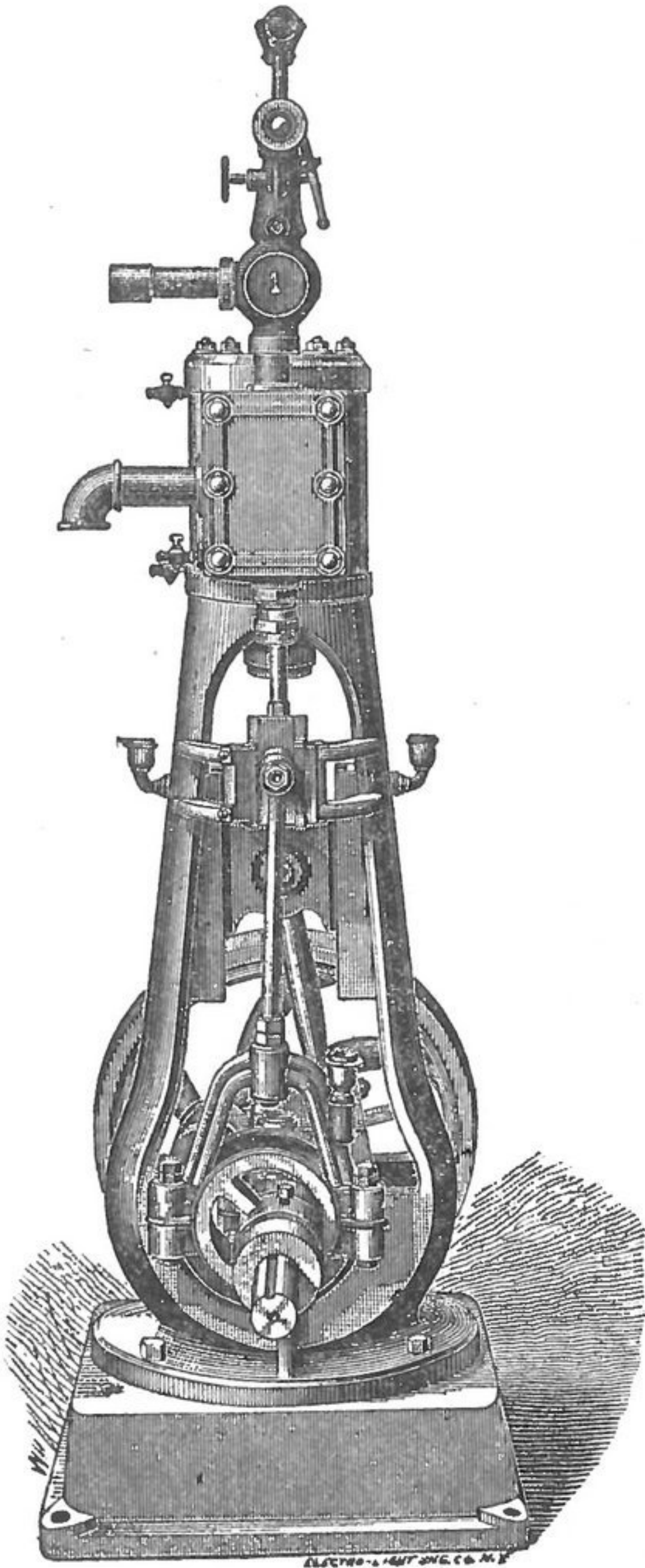
. . . Russia again looms large in the future. It is stated that the spring wheat acreage, two-thirds of the total (a proportion to be understood with much reserve), will yield an average as abundant as in 1888 and so balance the deficiencies of the winter wheat. The above view is not commercially accepted as correct, and holders of wheat reserves do not press supplies on unwilling buyers. France is eating some bread from new wheat and reports from eastern departments a yield 30 per cent. above an average. Other departments are much less confident. New lots are freely offered, and this action is thought to infer that the yield is satisfactory. Most lots are damp. Austria-Hungary has been suffering from great heat and drought and accepts the early estimates of deficiency as realized. Old stocks of flour are decidedly enhanced in value. Some great districts, as Galicia and Silesia, are reported very much below a common harvest yield.

COTEMPORARY COMMENT.

In the southern portions of Minnesota and Dakota, as well as in northern Iowa, where threshing has progressed enough to develop the yield of grain, there is general surprise with the result. Much of the whole was pinched in the straw by dry weather in May and June, entailing well-grounded fears for the outcome. About the time small grain began to head the weather became favorable, with gratifying consequences. In many fields the yield is from 20 to 30 bushels where 15 to 20 bushels were calculated upon, and where the expectation was 4 bushels to 8 the return is 8 to 12 bushels. The quality is highly praised and merits it.—*Minneapolis "Market Record."*

The corn situation has not improved during the past week; on the contrary the chances for a good sound crop have been somewhat impaired. This is owing to the fact that the weather has continued cool and the growth has been slow when the condition demanded rapid development.—*Chicago "Daily Business."*

AUTOMATIC VERTICAL ENGINES



Especially adapted for Small Electric Light Plants. Perfect Regulation. Reversible Link Motion for Marine Use. Five to Fifteen Horse Power. Also manufacturers of

Lathes and Special Tools

Metal Patterns, Models and Machinery Built to Order. Send for Prices and Specifications.

Lloyd & Sterrett

COR. 16TH AND STATE STS.,
ERIE - - PENN.



**MOORE'S
PATENT
BARREL HEATER.**

For all kinds of coo-
perage. Thousands
in use in all parts of the
U. S. Send for Circular.

JOLIET STOVE WORKS. JOLIET ILL.

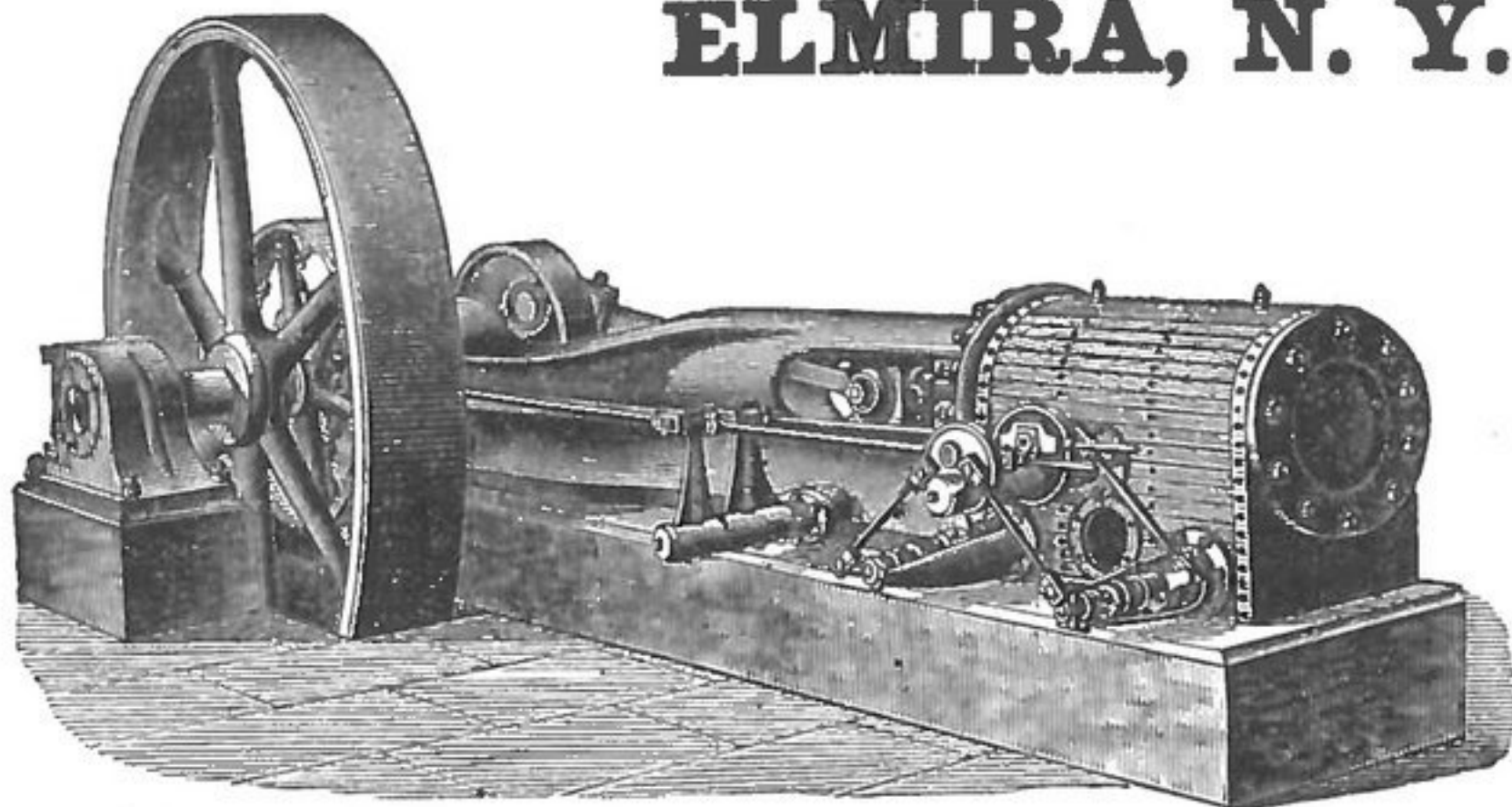
PAYNE HIGH SPEED CORLISS ENGINE.

SHAFT GOVERNOR COMBINED WITH CORLISS WRIST-PLATE.

ECONOMY OF FUEL.

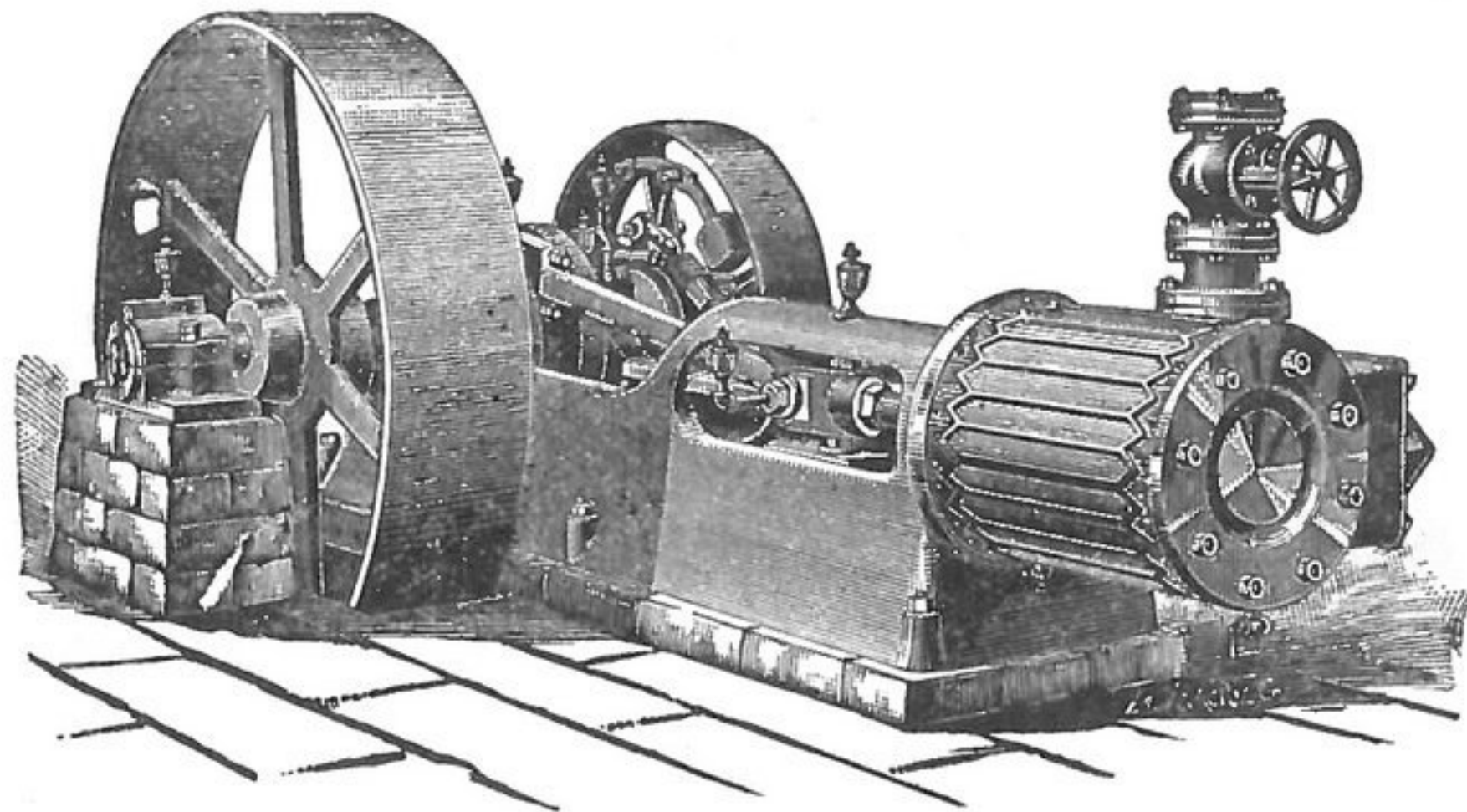
REGULATION EQUAL TO ANYTHING IN USE.

B. W. Payne & Sons,
ELMIRA, N. Y.



10 S. Canal Street,
CHICAGO, ILL.
45 Dey Street,
NEW YORK.
Hill, Clark & Co.
BOSTON, MASS.

AUTOMATIC ENGINES FROM 2 TO 200 HORSE POWER.
Economic Power Plants



Especially Adapted to Electric Lighting and
WOOD-WORKING ESTABLISHMENTS

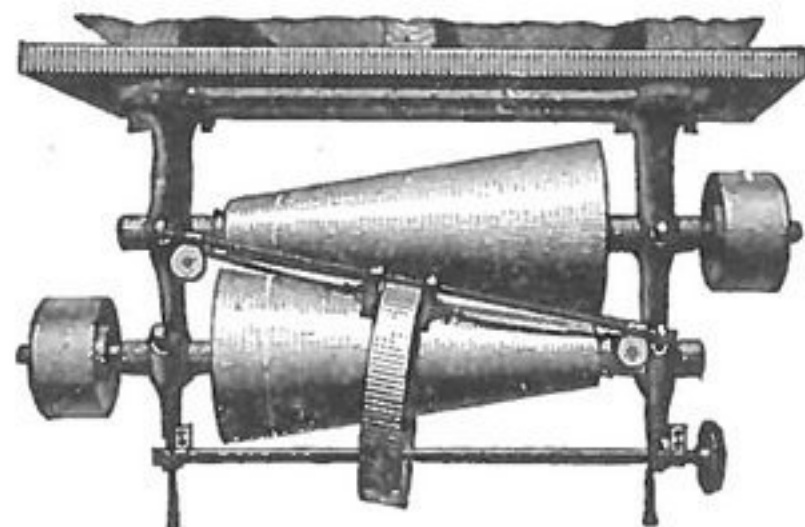
MANUFACTURED BY

VALLEY IRON WORKS, WILLIAMSPORT, PENN.

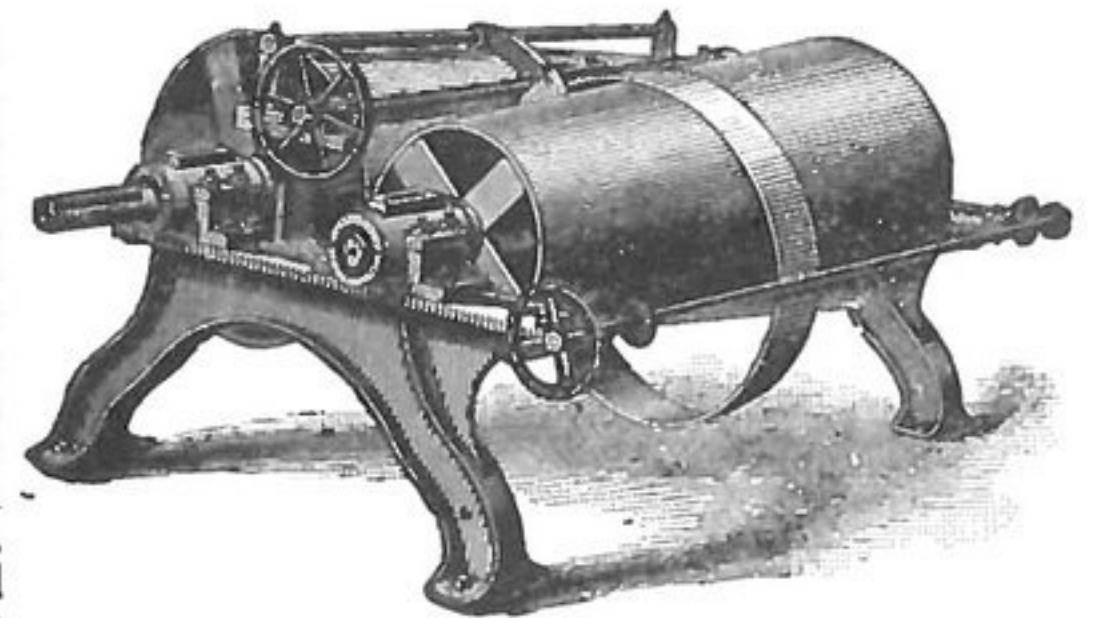
Please Send for Our New Catalogue and Mention "The Milling World."

THE EVANS FRICTION CONE & FRICTIONAL GEARING

"PATENTED."



This cut represents a set of hanging cone pulleys. This pattern is intended for that class of machinery that stops and starts at the same speed, and at the same time be able to change the speed more or less while running. These cones are also fitted with a governor where a steady motion is required and the initial power is



fluctuating. All sizes made from 1/2 Horse Power to 50 Horse Power. **SEND FOR ILLUSTRATED CATALOGUE.**

EVANS FRICTION CONE CO., 85 Water St., BOSTON.



KEEP YOUR BELTS FROM SLIPPING

And Save Your Power by Using FRICTION COVERING for Pulleys. Agents Wanted. Satisfaction Guaranteed. Easily Applied. No Rivets. Effective.

NATIONAL PULLEY COVERING CO., BALTIMORE, MD.



OFFICE OF THE MILLING WORLD,
BUFFALO, N. Y., Aug. 24, 1889.

Friday of last week brought dull but firm markets, on smaller western receipts and unfavorable weather reports from Europe. August wheat closed at 86½c. Options 950,000 bushels. August corn closed at 53½c. and oats at 27½c. Wheat flour was in fair export and home demand at firm prices. The other lines were featureless.

Saturday brought reports of finer weather and larger receipts in the West, and the markets went dull and easier. August wheat closed at 86½c. Options 500,000 for the half-day. August corn ruled at 44¼c. and oats at 27½c. The minor lines were quiet.

Monday brought conflicting weather reports from Europe, of selling by European holders, and of a large increase in the visible supply, making the markets dull and lower. August wheat closed at 85½c. Options 1,280,000 bushels. August corn closed at 44c. and oats at 27¼c. New samples of California Bay brewing barley received showed good color, with the average better than that of State or Canadian.

The visible supply in the United States and Canada was:

	1889.	1888.	1887.
Aug. 17.	Aug. 18.	Aug. 20.	
Wheat.....	14,220,534	26,263,305	31,998,593
Corn.....	8,927,060	8,239,741	6,103,143
Oats.....	4,998,240	1,573,432	4,417,001
Rye.....	857,580	195,863	300,586
Barley.....	356,061	145,501	153,486

Wheat flour was in small trading, the home demand being light and the European cables discouraging. Some of the grades remained firm, but, while there was no general quotable change in prices, there were weak spots visible. The minor lines were featureless.

Tuesday brought a stronger opening on wet weather reports at home and abroad, but the closing was weaker on better interior movements. August wheat opened at 85½c. and closed at 84½c. Options 1,360,000 bushels. August corn closed at 44c. and oats at 27¼c. Wheat flour was dull and unchanged, with trade scattering. The minor lines were featureless.

Wednesday brought extreme dullness in the grain markets generally. Foreign cables on weather and market conditions were extremely conflicting. Cold weather was reported in the Northwest. August wheat closed at 84½c. Options 880,000 bushels. August corn closed at 44c., and the cold weather reports from the Northwest toned up this line somewhat. August oats closed at 27c. and the line was dull and quiet. Rye grain was in light supply and firm at 52½c. for Western, with State nominal and not on offer. Mill-feed was quoted at 60¢@65c. for 40-lb.; at 57½¢@60c. for 80-lb.; at 75¢@80c. for 100-lb.; at 80¢@85c. for sharps, and at 70c. for rye feed. Barley was not quotably changed. Wheat flour was in small demand, heavy and unchanged. Following are the quotations:

SPRING FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.60@1.85	\$....@....
Fine.....@2.20	2.25@2.60
Superfine.....	2.25@2.55	2.50@3.00
Extra No. 2.....	2.75@3.00	3.00@3.15
Extra No. 1.....	3.25@3.85	3.50@4.25
Clear.....	3.35@3.75	3.65@3.90
Straight.....	4.40@4.50	4.40@5.25
Patent.....	5.00@5.65	5.40@6.00

WINTER FLOUR.		
	Sacks.	Barrels.
No grade.....	\$1.75@2.00	\$....@....
Fine.....	2.25@2.50	2.35@2.60
Superfine.....	2.60@2.75	2.60@2.85
Extra No. 2.....	2.65@2.90	2.75@3.00
Extra No. 1.....	3.10@4.25	3.25@4.25
Clear.....	3.65@4.15	4.00@4.35
Straight.....	4.25@4.50	4.45@4.80
Patent.....	4.50@4.80	4.85@5.25

CITY MILLS.		
W. I. grades.....	4.25@4.35	
Low grades.....	2.60@2.70	
Patents.....	5.10@5.90	

Buckwheat grain was quoted at 53¢@55c. Rye flour was steady and quiet at \$2.80@3.00 for superfine, and at \$3.05@3.10 for fancy. Cornmeal was quiet at \$2.45@2.75 for Yellow Western, and at \$2.75 for Brandywine.

Thursday was a day of dull and weak markets. August wheat closed at 85½c. Options 1,440,000 bushels. August corn closed at 43½c. and oats at 27c. Both were in small trading. Wheat flour weak and dull. The minor lines were featureless.

BUFFALO MARKETS.

WHEAT—In moderate demand and market dull and weak; No. hard of crop '87 was quoted early in the day at \$1; and at the close 5,600 bu sold at that price, about the only sale of any importance all day. No. 1 hard of crop '88 was quoted at 93c; No. Northern at 19c; No. 2 do at 88c, and No. 2 Spring at 90c asked spot. Winter wheat in fair demand and market steady, with very light receipts of No. 2 and No. 3 extra red, which would bring 87c. for the former on track and 80¢@81c. for the latter if it were here; No. 3 red was quoted at 75¢@76, and No. 4 at 78¢@74c; No. 2 do was offered at 85c. Sales were made of 2,500 bu No. 2 amber au 83½c; 1,000 bu old red 78c in store, and 1 carload No. 2 white at 88c; 92c. was asked for No. 1 white California. O'd No. 1 white was quoted at 95¢@96. **CORN**—In fair demand and market steady: 6,000 bu No. 3 corn which sold at 40½c was about the only sale reported all day, but prospects are a great deal better and holders are looking for a boom; 40½c was asked for No. 2 corn to arrive; No. 3 corn was offered at 39½c. **OATS**—In limited demand and market dull and weak, which has been the case for the past three or four days. Sales were made of 1,000 bu old No. 2 white at 29c, 1,000 bu do at 29½c, 2 carloads No. 3 white at 26½c on track, and 5 carloads No. 2 mixed at 25½c; white State oats from farmers' wagons, 32¢@34c. **RYE**—Was dull; quotable at 49c for old in store; and 47c for new on track. **BARLEY**—Quiet and neglected. **CANAL FREIGHTS**—Steady. Rates of freight on wheat to New York 4c, on corn 3½c, and on oats 2½c; no quotable rates on rye or barley. Corn to Rotterdam 3½c; oats 2½c. Corn to Albany 3½c; do to Utica 2½c; wheat to Syracuse 2½c; corn 1½c; wheat to Rochester 1½c; lumber rates to New York \$2.00, to Albany \$1.50. **RAILROAD FREIGHTS**—To New York, Baltimore and Philadelphia rate points on grain, flour and feed, 13c per 100 lbs; to Albany and West Troy, 10½c. **FLOUR**—City ground—Patent spring, \$6.25@6.50; straight Duluth spring, \$6.00@6.25; bakers' spring, best, \$5.75@6.00; do rye mixture, \$5.00@5.25; patent winter, \$6.00@6.25; straight winter, \$5.00@5.25; clear winter \$4.75@5.00; cracker, \$4.75@5.00; graham \$4.75@5.00; low grade, \$3.00@4.00; rye, \$3.25@3.50 per bbl. **OATMEAL**—Akron, \$6.00; Western \$5.75 per bbl; rolled oats, in cures, 72 lbs \$3.25. **CONMEAL**—Coarse, 85¢@90c; fine, 90¢@95c; granulated, \$1.50 per cwt.

Says the New York Tribune of August 22: It was said on the Produce Exchange yesterday that the grain men of this city have about determined to send a commission, composed of prominent members of the trade, over to Europe, to visit Russia and India and the great wheat-producing countries of the globe. The business of the commission will be to find out why it is that Russia and India are able to undersell this country in the wheat markets of the world. From the small samples of foreign wheat from these surplus-exporting countries which have reached America, the trade here thinks it strange that such wheat can supplant American wheat. They think there is something wrong which should be remedied. To

find out what is wrong will be the object of the commission, whose stay abroad will necessarily be a long one. The main reason for the sudden energy displayed by the American grain men is the threatened surplus of over 200,000,000 bushels of wheat which will be in this country after the present crop is threshed.

From Washington Territory the reports of the harvest are much better than were anticipated. Farmers are well under way with their threshing. In the foothills the wheat is turning out well, while in the lighter lands wheat is badly shrunken. The yield is from 10 to 15 bushels per acre, according to locality.

California has harvested 57,000,000 bushels of fine wheat from 3,554,000 acres.

THE "HARLOW" Positive Feed Lubricators.

For Marine and Stationary Engines, Steam Pumps, Electrical and other Machinery.

MAXIMUM ECONOMY IN OIL.
MARKED ECONOMY IN FUEL.

Not dependent upon or operated by Steam Pressure, Condensation or Gravity.
Not affected by changes of temperature.

BEING operated by some moving portion of the engine or machine to be lubricated, the "Harlow Lubricator" starts and stops with the engine or machine being lubricated, without requiring the slightest attention from the engineer or operator, always delivering the oil in any amount from a drop to a constant stream. The cup can be filled at any moment while the engine or machine being lubricated is in operation, without causing any leakage either of oil or steam.

Harlow Lubricator Mfg. Co. BOSTON, Mass.
U. S. A.

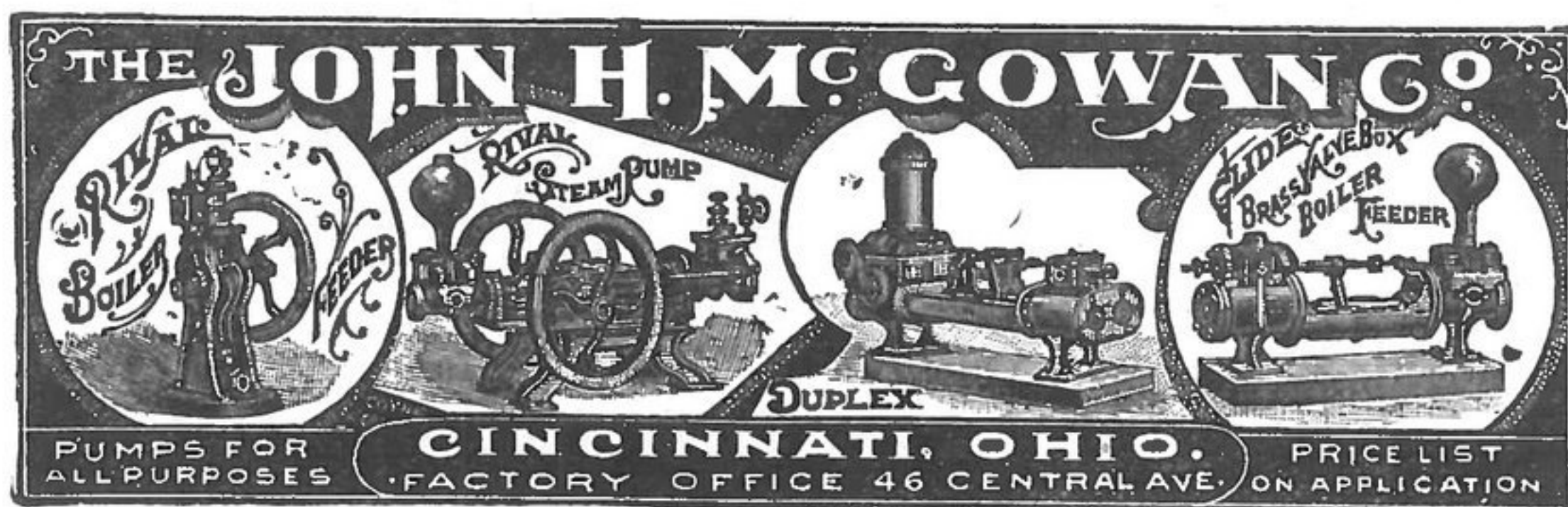
* THE INK *
WITH WHICH THIS PAPER IS PRINTED
IS MADE BY THE
QUEEN CITY PRINTING INK CO.
CINCINNATI, O.

"DE MAN WOT KNOWS IT ALL
is allus a-makin' change, a-
buyin' ob experience."

The man who does not think that
he "Knows it All" about
Pumps, Steam Engines and Boilers
Can find out a great deal about
them in

GRIMSHAW'S PUMP CATECHISM - \$1.00
STEAM ENGINE CATECHISM - - - 2.00
BOILER CATECHISM - - - - - 2.00
PREPARING FOR INDICATION - - 1.00
BY MAIL POSTPAID.

McFaul & Nolan, - Buffalo, N. Y.



BRANCH HOUSE, 1425 EAST MAIN STREET, RICHMOND, VA.



RELIANCE OIL & GREASE CO., CLEVELAND, O.,

—MANUFACTURERS OF—

Finest Lubricants for Milling Plants. A Challenge to the World.

WRITE US. "VALVE OLEINE"—675 Degrees Fire Test, Cylinder Oil.

"CHIEF"—Roller Mill Lubricant.

"NIAGARA"—Belt Grease.

"RUSSIAN"—Engine and Machine Oil.

"ANCHOR"—Roller Mill Grease.

"CHELSEA"—Scale Solvent, Best on Market. Agents Wanted.

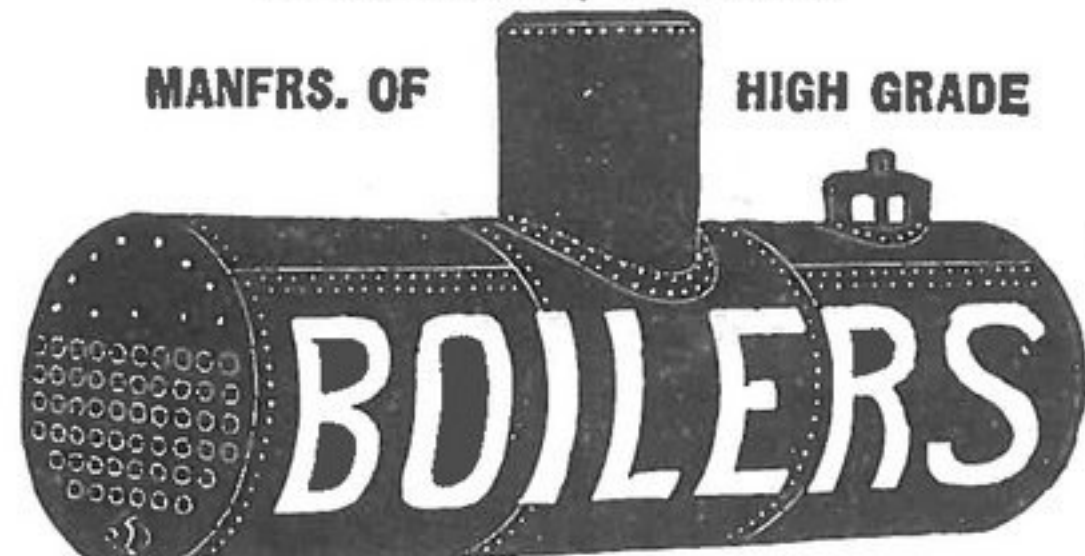
FREE—SAMPLES, CATALOGUE, AND ALL INFORMATION.

SPECIAL
HIGH GRADE
PRODUCTS

EAGLE IRON WORKS,
DETROIT, MICH.

MANFRS. OF

HIGH GRADE



**HORIZONTAL, UPRIGHT
PORTABLE AND MARINE.**

Oil Tanks & Smoke Stacks,

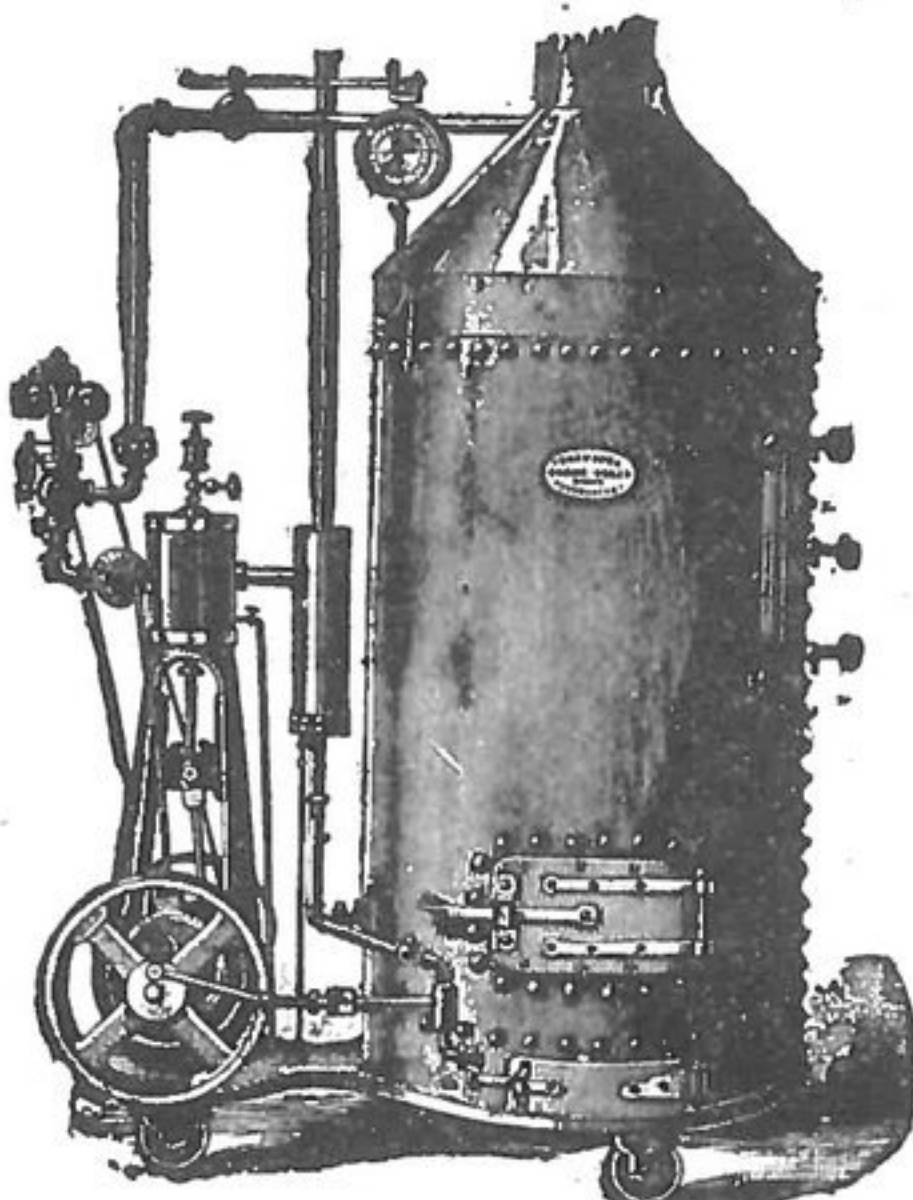
HEAVY SHEET IRON WORK.

CORRESPONDENCE SOLICITED.

**TONAWANDA
ENGINE AND BOILER WORKS**

A Large Assortment of Machinery.

The Best 6-Horse Power Semi-Portable Upright Engine and Boiler Made.



SPECIAL PRICE. GUARANTEED.

SEND FOR CATALOGUE.

ARMITAGE, HERSCHELL & CO.

Tonawanda N. Y.

New Improved Patent Head Linings.



DESCRIPTION.

These Linings are curved edgewise and flatwise, besides having the edge beveled, so as to make them fit the head and chine PERFECTLY, without springing them edgewise when nailing.

If you use them once you will have NO OTHER. No need of pounding fingers, as the ends do not have to be held down while nailing. They are much more convenient to nail and look better than any other. They are first tied in bundles of two hundred, and, when dry, are put into bales, weighing about fifty pounds each, and tied with two strong wires, to make them handle better and to prevent loosening out in transit.

Write for prices and state about the number you use per year.

To convince you of their merit, and for the purpose of introducing them, I will ship a sample order of from five to ten thousand at a REDUCED RATE.

SEND US A TRIAL ORDER: SATISFACTION GUARANTEED.

J. H. PETERS,
Owner of Patent and Manufacturer,
COLEMAN, MICH.

"Cooper on Belting"

A Treatise on the Use of Belting for the Transmission of Power. With illustrations of approved and actual methods of arranging Main Driving and Quarter Twist Belts, and of Belt Fastenings. Examples and Rules in great number for exhibiting and calculating the size and driving power of belts. Plain, Particular and Practical Directions for the Treatment, Care and Management of Belts. Descriptions of many varieties of Beltings, together with chapters on the Transmission of Power by Ropes; by Iron and Wood Frictional Gearing; on the Strength of Belting Leather; and on the Experimental Investigations of Morin, Briggs, and others, for determining the Friction of Belts under different tensions, which are presented clearly and fully, with the text and tables unabridged. By JOHN H. COOPER, M. E. Second Edition. One vol., demi octavo. Cloth, \$3.50. Sent post-paid on receipt of price. Address,

McFAUL & NOLAN, BUFFALO, N. Y.

**THE STEVENS
PORTABLE MILLS**

For CORN and
FEED GRINDING

Genuine French
BUHR STONES

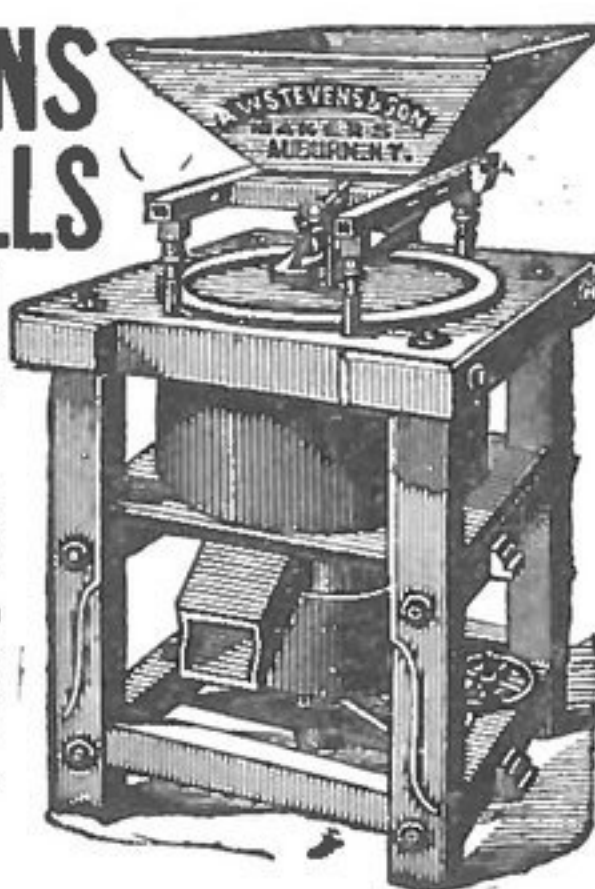
Power Corn Sheller

Prices Below the Lowest

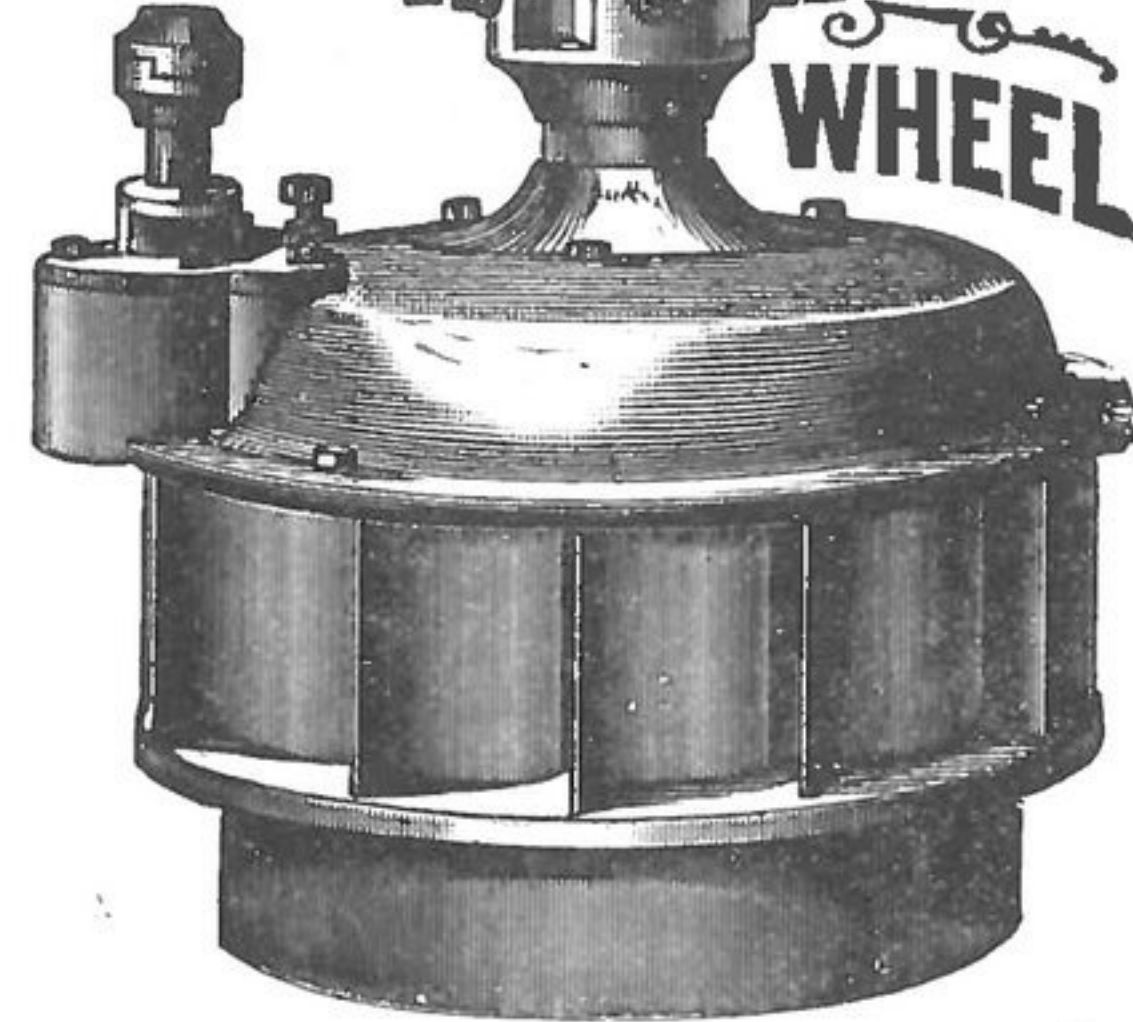
A.W. STEVENS & SON

AUBURN, N. Y.

Mention this paper.



**ALCOTT'S
IMPROVED
TURBINE
WATER
WHEEL**



THIS WHEEL GIVES HIGH RESULTS, AND IS ACKNOWLEDGED THE BEST, MOST PRACTICAL AND EFFICIENT TURBINE MADE. FOR SIMPLICITY, DURABILITY, AND TIGHTNESS OF GATE IT HAS NO EQUAL.

State requirements and send for Catalogue to

T. C. ALCOTT & SON,
MOUNT HOLLY, N. J.

The LIPPOLD DUSTLESS CORN SHELLER & CLEANER

MANUFACTURED BY

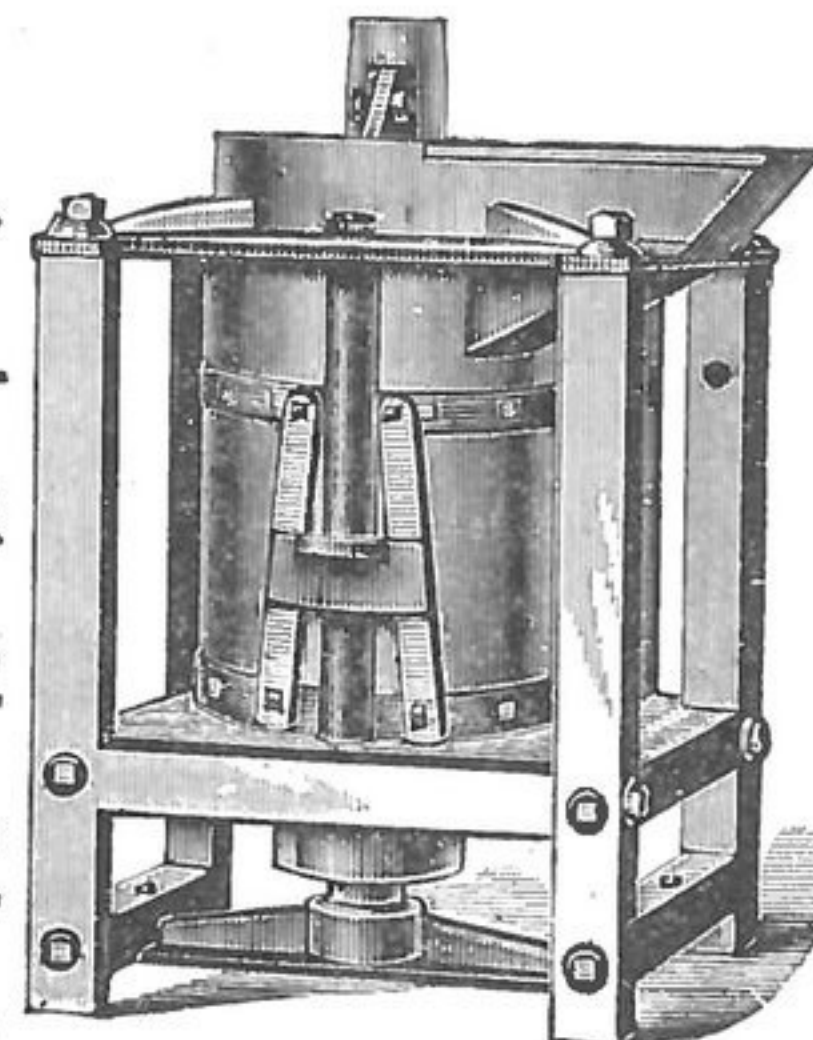
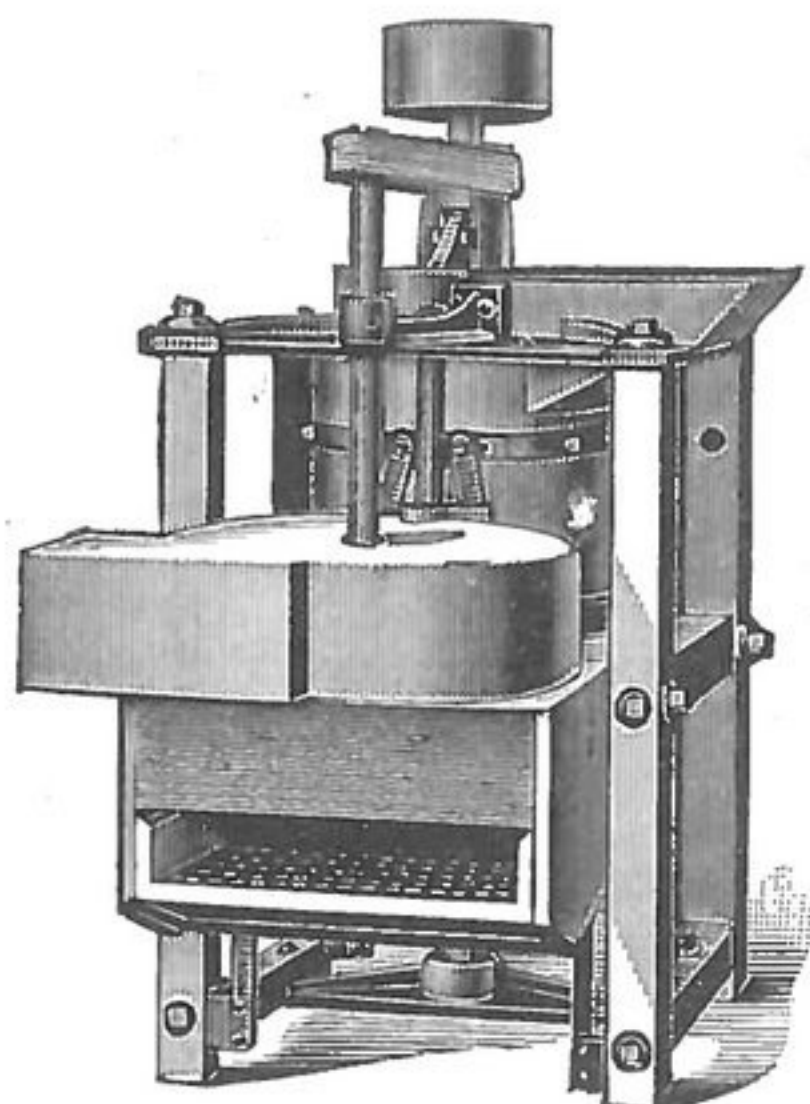
The LIPPOLD MFG. CO.
ERIE - - PENN.

THE HIGHEST CAPACITY for the LEAST MONEY.

The Best Machines for Mills and Elevators.

Machines Sent on Thirty Days' Trial.

SHELL UNHUSKED CORN AND CLEAN IT PERFECTLY.



WRITE FOR ILLUSTRATED CIRCULAR WITH PRICES.
NAME THIS PAPER.

INSURE IN THE TRADERS & TRAVELERS

Accident Company,
287 BROADWAY, NEW YORK.

BENEFITS.

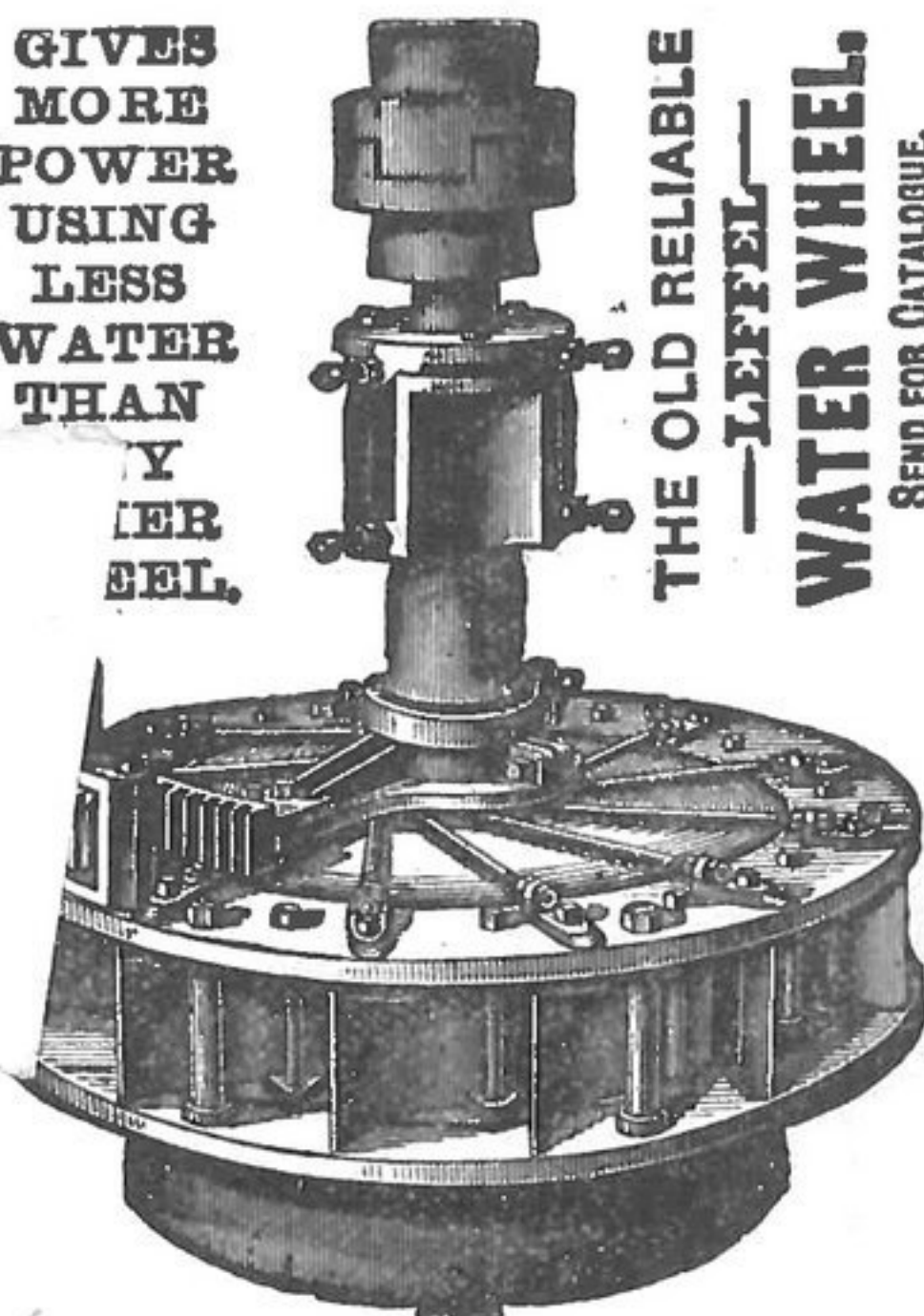
\$5,000 for Death.
\$5,000 Loss of Limbs.
\$2,500 Loss of Limb.
\$2,500 Loss of Sight.
\$1,250 Total Disability.
\$650 Loss of One Eye.
\$25 Weekly Indemnity for
26 Weeks.
One Set of Individual Registry Plates
Included.

COST.

Four Quarterly Payments, \$10.00
Annual Dues, " " " 1.00
Membership Fee, 5.00. \$11.00

IMPORTANT NOTICE.—The Traders & Travelers Accident Co. of New York desire the services of one responsible representative in each town to act as agent for the general transaction of their business. A liberal and permanent arrangement will be made with parties who can fill the above requirements. Address
C. S. SOMERVILLE, Sec'y.

GIVES
MORE
POWER
USING
LESS
WATER
THAN
ANY
OTHER
WHEEL.



THE OLD RELIABLE
—LEFFEL—
WATER WHEEL.

SEND FOR CATALOGUE.
JAMES LEFFEL & CO.,
SPRINGFIELD, O., OR 110 LIBERTY ST., N.Y.

PREJUDICE Investigate the merits of the Reliance Safety Water Columns. It pays to keep posted. Many of the largest corporations have found it profitable to discard the old appliances and adopt these safeguards. There is always economy in safety. Send for illustrated price-list.
Reliance Gauge Co., 831 Sheriff St., Cleveland, Ohio.

The D&C TO MACKINAC

SUMMER TOURS.
PALACE STEAMERS. LOW RATES.

Four Trips per Week Between
DETROIT, MACKINAC ISLAND
Potoskey, Sault Ste. Marie, and Lake
Huron Way Ports.

Every Week Day Between
DETROIT AND CLEVELAND
Special Sunday Trips during June, July, August and Sept.

Double Daily Line Between
CHICAGO AND ST. JOSEPH, MICH.

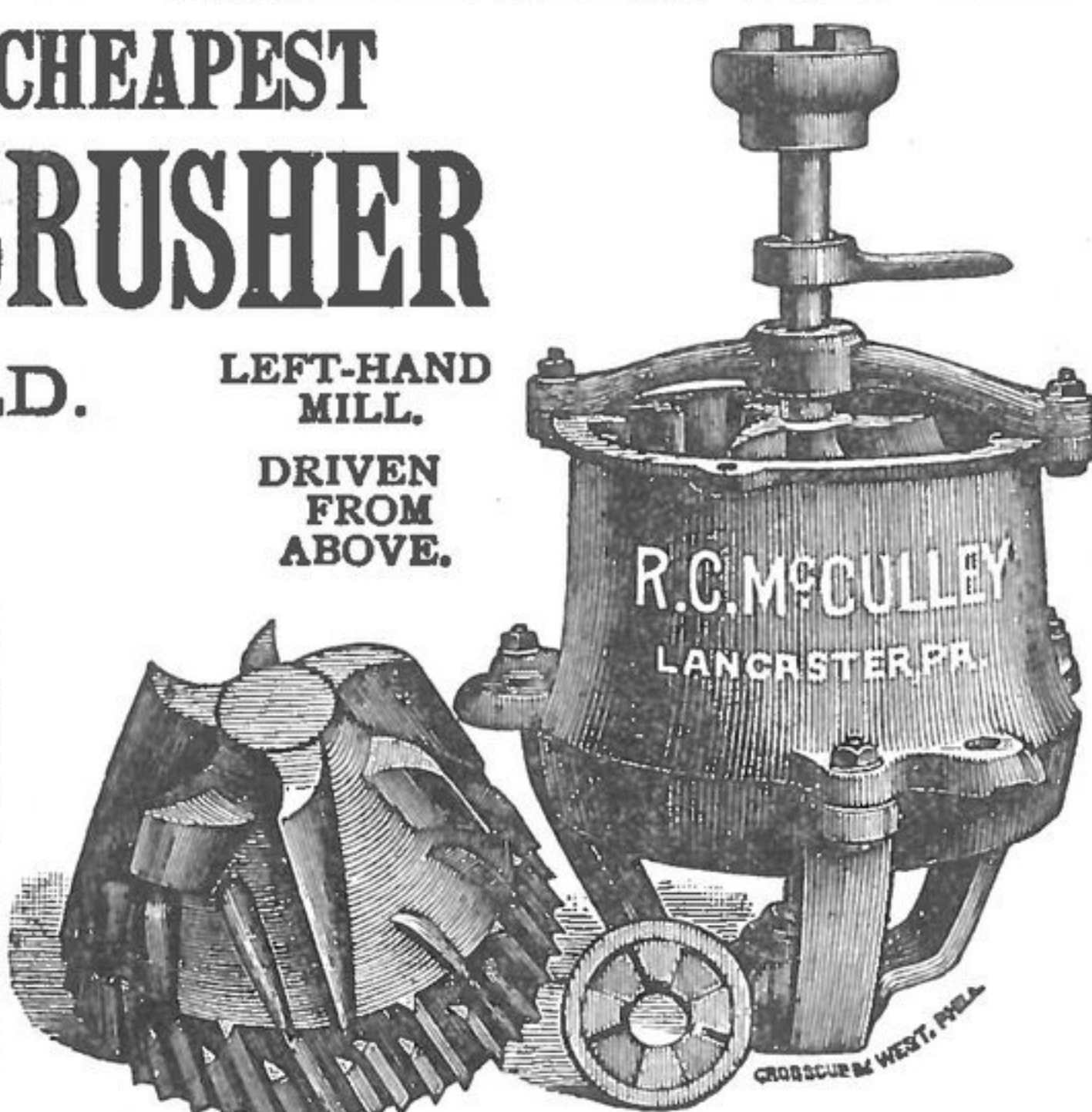
OUR ILLUSTRATED PAMPHLETS
Rates and Excursion Tickets will be furnished
by your Ticket Agent, or address
E. B. WHITCOMB, G. P. A., DETROIT, MICH.,
Detroit and Cleveland Steam Nav. Co.

THE BEST AND CHEAPEST CORN AND COB CRUSHER IN THE WORLD.

All wearing parts cast of a steel mixture. Notice difference in construction. Most area where most work is done, where all other crushers have least area where most work is done. Low priced machinery is not the cheapest, considering durability and efficiency. Sent on 30 days' trial when satisfactory reference is furnished.

Please Send for Circulars.

LEFT-HAND
MILL.
DRIVEN
FROM
ABOVE.



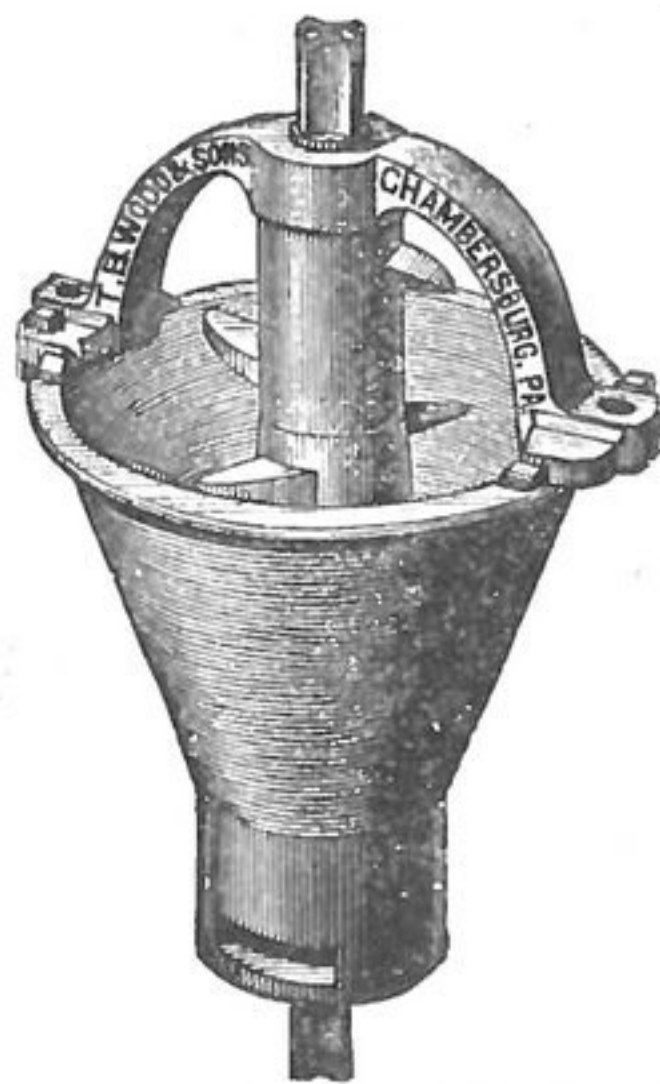
RIGHT-HAND
RUNNER.

R. C. McCULLEY, LANCASTER, PENN.

\$15

WILL BUY THE BEST AND CHEAPEST CORN & COB CRUSHER

IN THE WORLD.



Our crushers are made of a "special quality" of material that insures years of service. Thousands of these crushers are in use throughout the United States and Canada. Send for circular, giving testimonials from millers who are using them, and know a good thing when they see it.

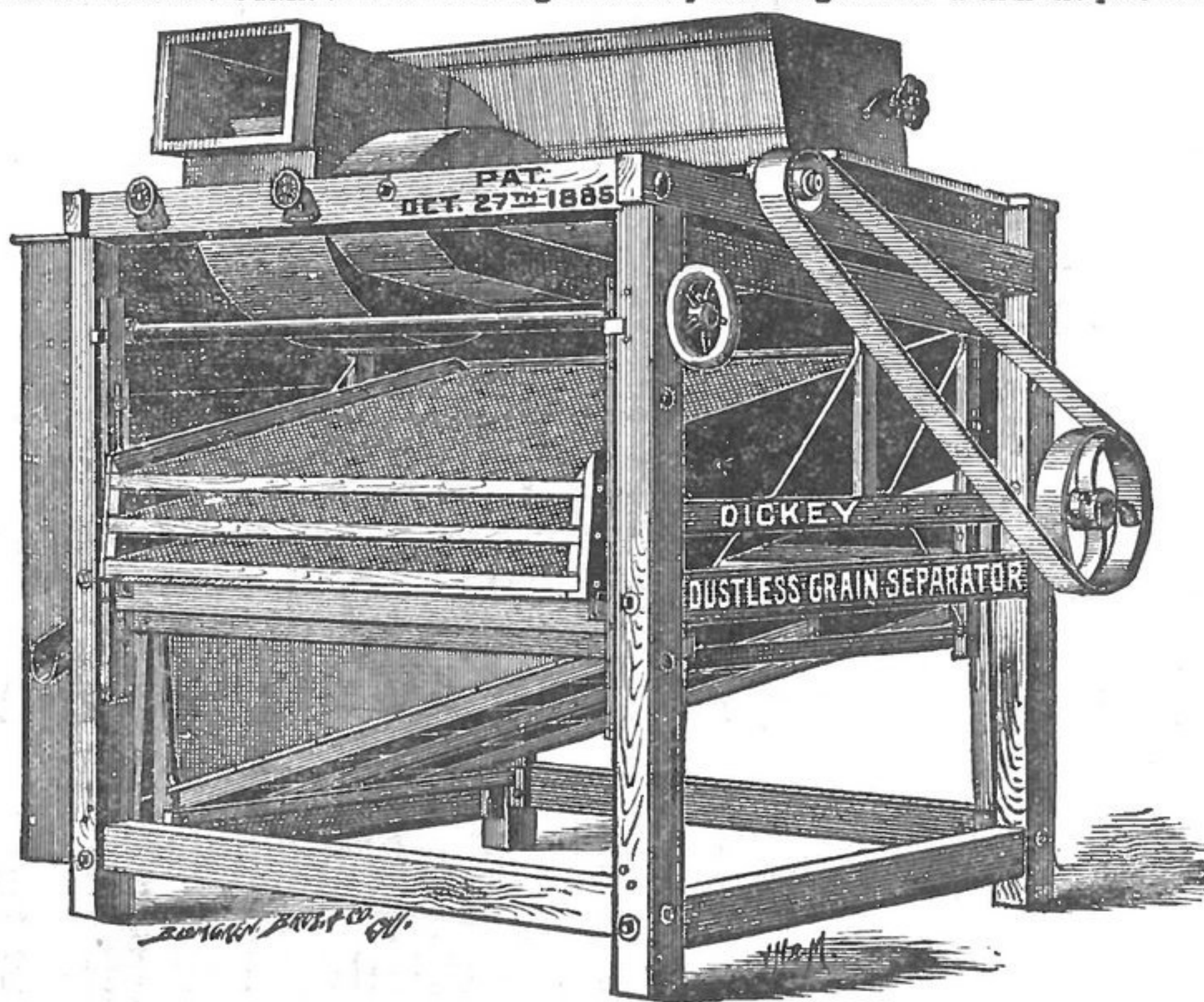
T. B. WOOD'S SONS, CHAMBERSBURG, PA.

Manufacturers of
Shafting, Pulleys, Hangers, Mill Gearing, Etc.

DICKEY DUSTLESS GRAIN AND FLAX SEPARATOR

This Separator is our latest and most perfect, and guaranteed to be the superior of any now on the market. This machine, as can be seen by the cut, is not a warehouse fanning mill with one patent attachment, but is a Dustless Separator, made for the express purpose of thoroughly cleaning and separating all kinds of grain in large quantities; its construction is such that the working machinery and weight is all within the parts or anchors.

WE CLAIM FOR IT SUPERIORITY.

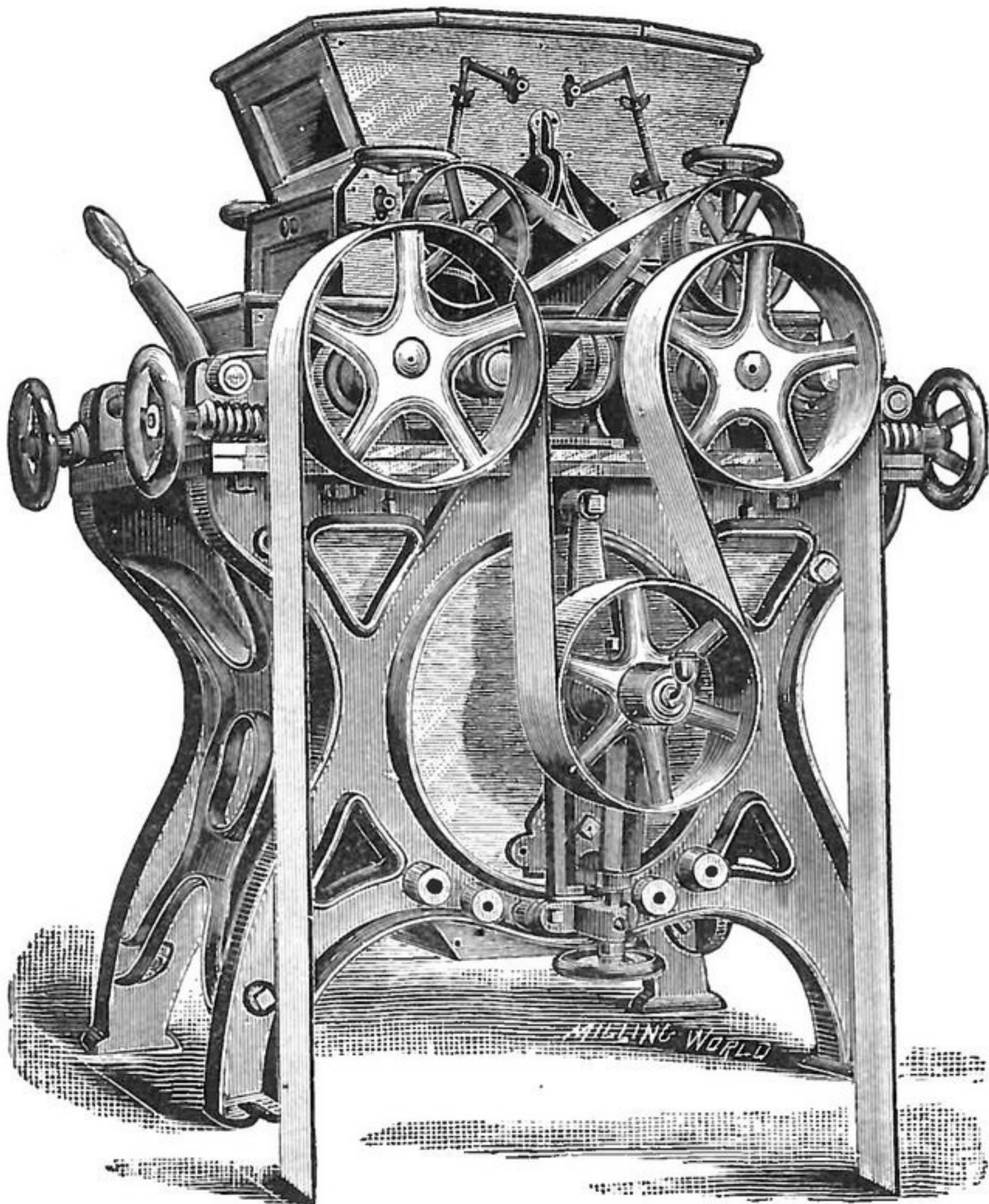


WE CLAIM FOR IT SUPERIORITY.

We claim for it Superiority over everything of the kind made, in simpleness, durability, saving of power, capacity and cost of construction. Its height will accommodate any number of spouts from different points, without moving machine. They have a capacity from 700 to 1,500 bushels per hour. We also control exclusively the manufacture of the celebrated Dickey Giant, End and Side Shake, Warehouse Mills, that have attained such a world-wide reputation. Sent on approval to any reliable party. For full particulars address,

A. P. DICKEY MANUFACTURING CO., Successors to **DICKEY & PEASE, RACINE, WIS.**

JOHN HUTCHISON MFG. CO., Mill Builders and Mill Furnishers.



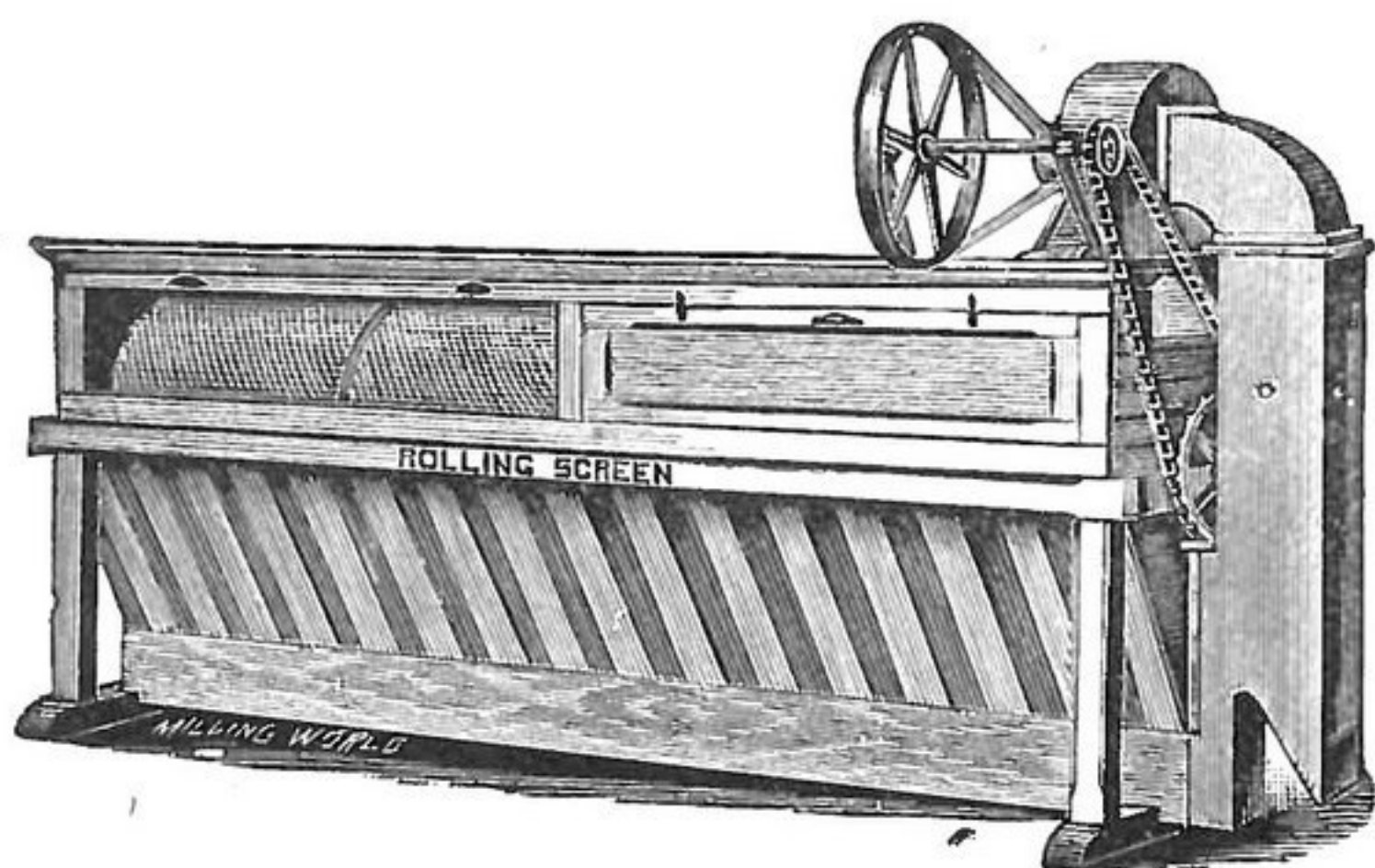
"The Rickerson." The original six inch 4 Roller Mill. We now own the patents on this mill and after greatly improving the mill manufacture them in four sizes:

6x12 inch.

6x18 inch.

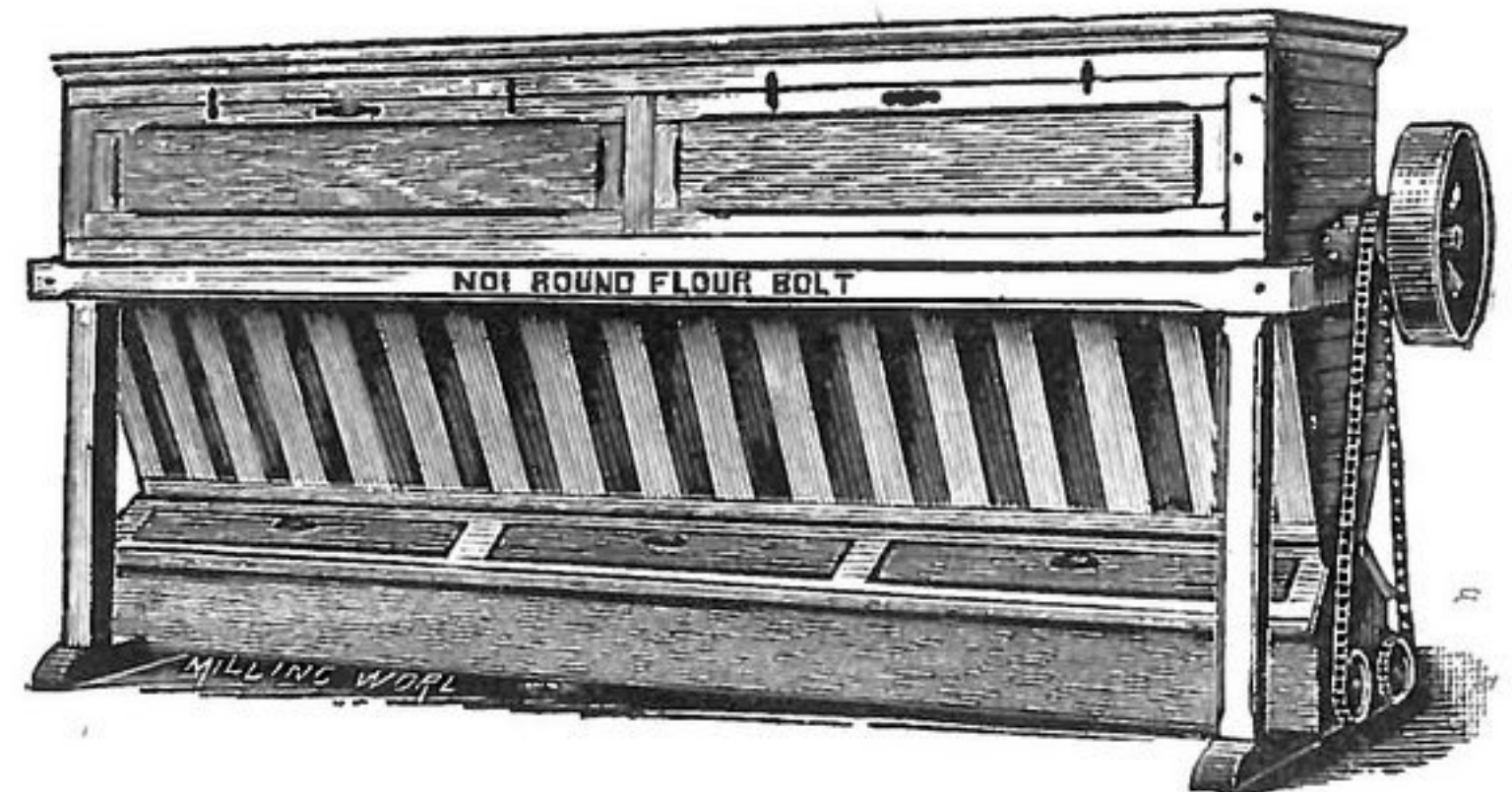
6x15 "

6x20 "

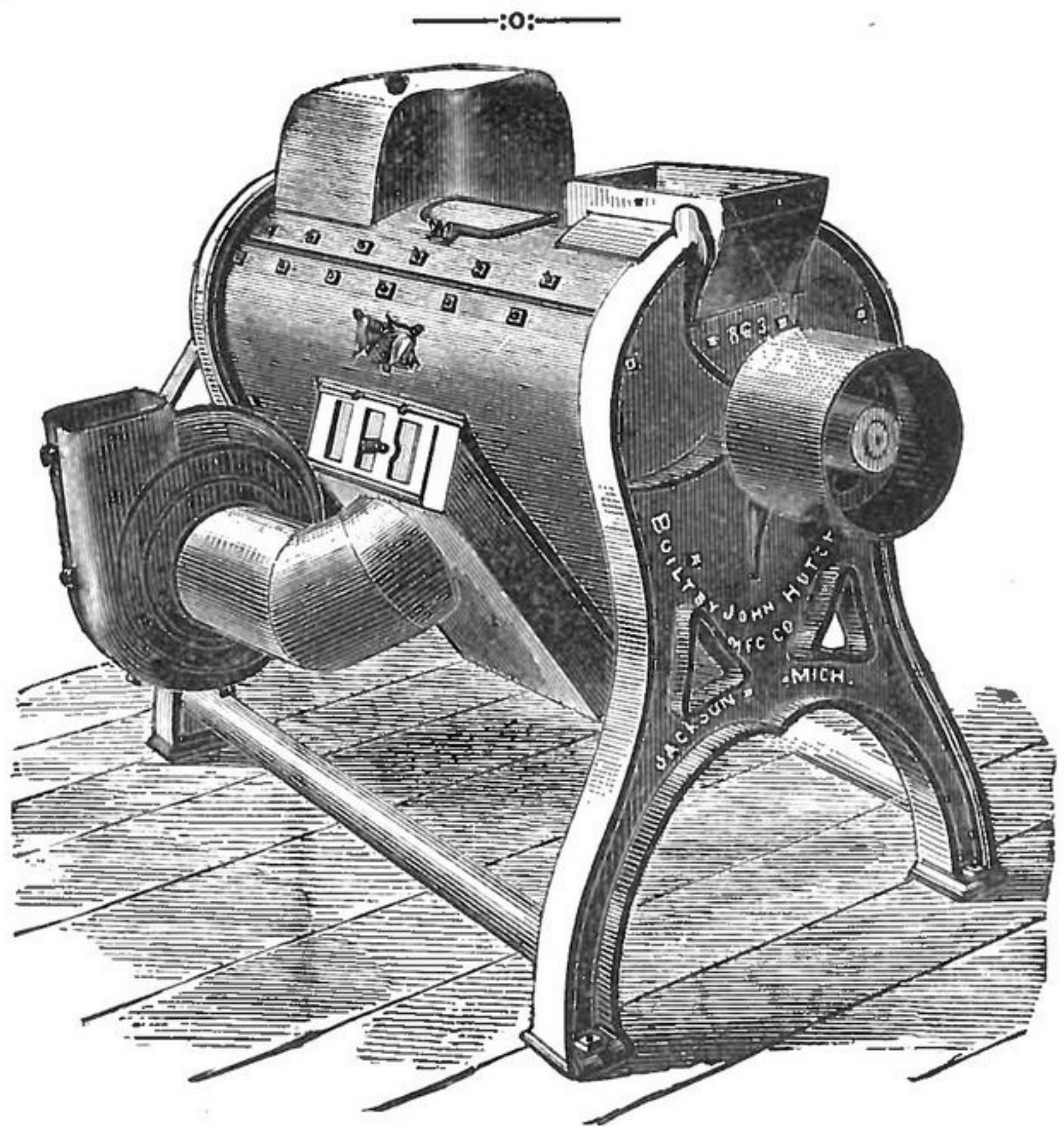


The above cut represents our New Rolling Screen, which is absolutely dustless and has as much scouring qualities as any two scouring machines now being made.

Send for Estimates for Our Full Roller Mills of any Capacity.



The above cut shows our New Round Slow Running Flour Bolt. We also build a Cylinder or Round Scalping Reel and we have lately built a number of new mills of medium capacity, using our Roller Mills, our Round Flour Bolts and Scalping Reels, getting better results than is usually obtained.



Hutchison's New Dustless Iron Corn Sheller, especially adapted for Mill and Elevator use.

—:ADDRESS ALL CORRESPONDENCE TO:—

John Hutchison Mfg. Co.

JACKSON. - - MICHIGAN.



ELEVATOR BUCKET.

PLEASE NOTICE.

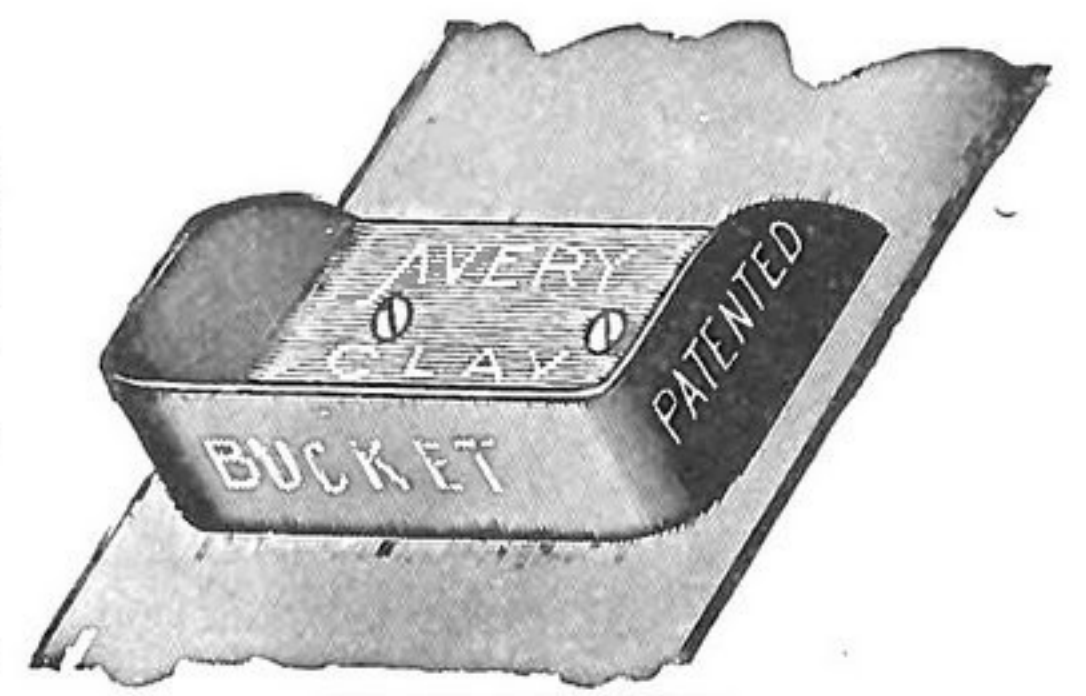
Our patents not only cover Seamless, Drawn, Stamped, Pressed or Forged Elevator Buckets; but also Pre-Date and Cover Round-Cornered Elevator Buckets when made Seamless, and are the Only patents ever issued in the World for a Pressed, Stamped, Drawn or Forged Seamless Elevator Bucket.

Stamping and Pressing of Sheet Metals for all Classes of Work. Also Tinning, Galvanizing and Japanning.

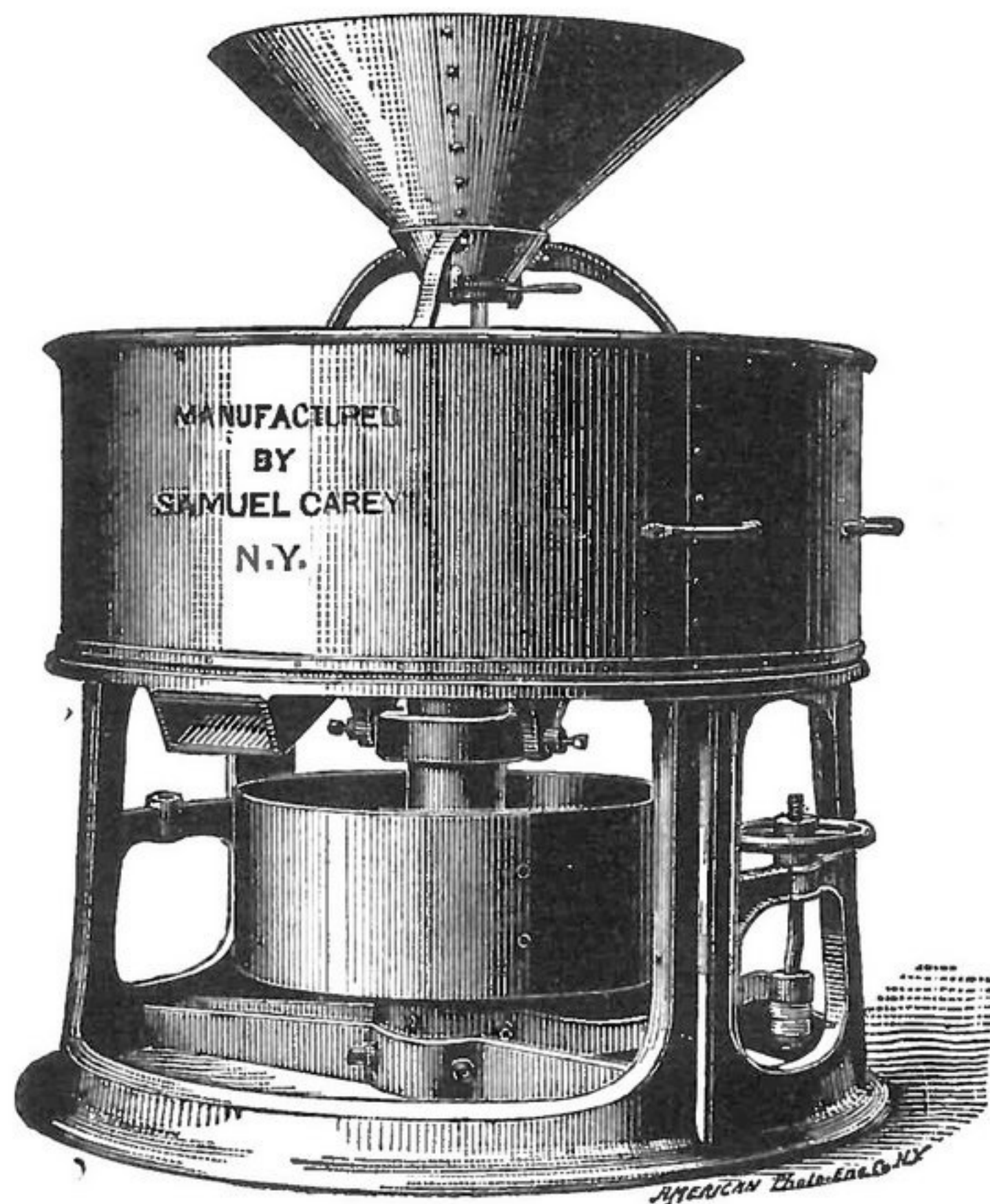
THE AVERY STAMPING CO.,

Successors to The Avery Elevator Bucket Co.,
Cleveland, Ohio, U. S. A.

H. W. Caldwell, 181 W. Washington Street, Chicago, Ill.,
General Agent.



CLAY BUCKET.



SELF-TRAMMING

PORTABLE MILL

BEST GRINDING MILL MADE.

BOLTING CLOTH

AND

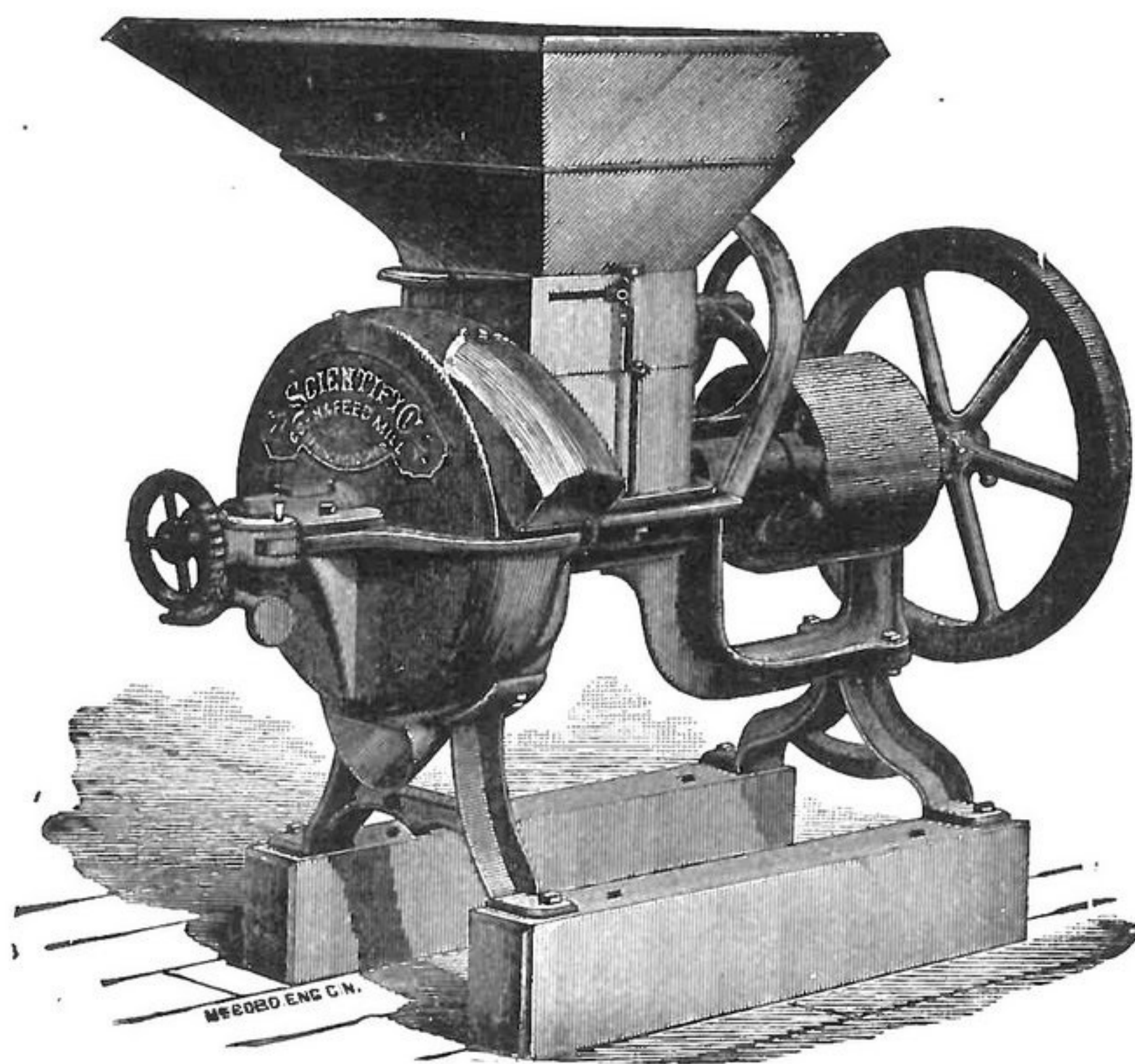
BURR AND ESOPUS MILLSTONES

WRITE FOR DISCOUNTS.

SAMUEL CAREY,

17 Broadway,

NEW YORK.

**THE SCIENTIFIC GRINDING MILL.**

POSITIVELY THE BEST MILL ON EARTH.

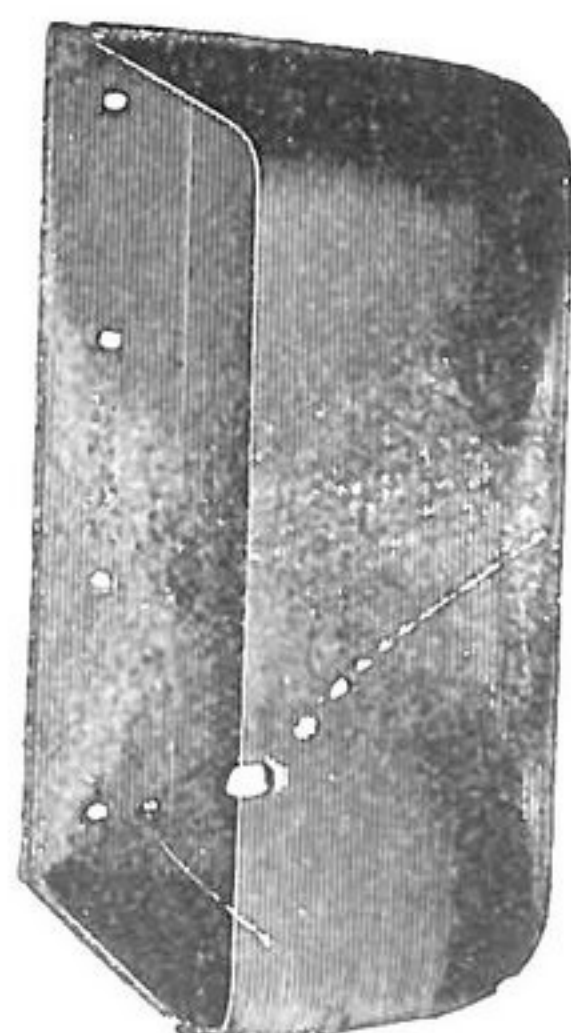
GRINDS PERFECTLY, EAR CORN, SHELLED CORN,
AND ALL GRAINS.**GRINDING PLATES A SPECIAL METAL**

*Hard as Steel, Guaranteed to Grind from Five to Eight
Thousand Bushels before wearing out.*

SEND FOR ILLUSTRATED CATALOGUE, PRICES, ETC.

THE FOOS MFG. CO.

SPRINGFIELD OHIO.

**STILL ON TOP.**

Perhaps the HIGHEST COMPLIMENT that could be paid the "Salem" bucket is the fact that during the past few years ITS SHAPE HAS BEEN SO CLOSELY IMITATED by other manufacturers as to infringe our patented rights, but experience reveals the IMPERFECTIONS OF IMITATIONS, and we therefore take it as a FURTHER COMPLIMENT to the "SALEM" bucket that some of its old patrons who were *Induced to Try the Imitations have now Returned to the Salem Bucket, thereby Acknowledging it to be the Most Satisfactory.* Don't be deceived by other makes of buckets that are claimed to be "Just as Good." Insist upon having the ORIGINAL AND RELIABLE SALEM BUCKET. All legitimate Salem buckets are plainly marked with the word

SALEM**W. J. CLARK & CO.,** SOLE Manufacturers **SALEM, OHIO.**

THORNBURGH & GLESSNER, General Agents, CHICAGO, ILL.